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MR. ABERNETHY'S

PHYSIOLOGICAL, PATHOLOGICAL, AND SURGICAL OBSERVATIONS;

DELIVERED IN THE

ANATOMICAL COURSE OF LECTURES

At St. Bartholomew's Hospital.

Functions of the Eye, &c.

I HAVE now to speak of the functions of the Eye, as an organ of sight; but this is a very difficult subject. I am sure I don't pretend to have knowledge enough of optics to give you a correct account of it, and I have always questioned whether the Class had knowledge enough to understand it, if it were given. Well, under these circumstances, I have made out as good a way of speaking of it as I can, by reminding the auditors of certain circumstances relative to *light*, which they may ascertain to be facts, and consider at their leisure.

First, then, it does appear, that light consists of very minute parts of matter following each other in straight lines, and moving with incredible velocity. These light particles of matter are subject to attraction and to reflection: like a ball upon a billiard table striking against an object which reflects it, it rebounds at the same angle. To ascertain that, you have only to consider this common observation: suppose there was a mirror here, and that three persons were to stand—two at the side of it, making the same angle with the mirror, and one in front of the mirror, what would be the consequence? Why, that the two people who were at the side would see each other very distinctly, but they would not see the man who stood in the front; and the man in the front would see himself, but he would not see the other two, for the rays of light going upon my person, (supposing I was one of those standing at the side of the mirror,) impinging on me, and being reflected, would rebound, and affect the person who stood at the same angle, whilst the rays of light going to the person in the middle would rebound his own image, and would be evident to himself, but he would not see the image of those who stood at the side.

Now I say, then, they are susceptible of attraction—attraction by things which contain more condensed matter. Suppose all below a line to be water, and all above that line to be air, and suppose a ray of light to be passing from the water into the air, it will be attracted when it gets to the surface of the water by the denser medium, and its course will be broken. It will be *bent*, to use the optical language, it will be bent from the perpendicular light falling on the surface of the water; the ray of light will appear broken, but we make no allowance for the refraction; we always suppose the rays of light to come, as they usually do, in straight lines to our eyes.

Well, now, here's the experiment: I put a shilling in the bottom of a basin; I stand so far distant, as that the edge of the basin conceals the shilling from my view; I half fill the basin; I let another person half fill the basin with water, and then I see the shilling. O, persons who had never tried the experiment would think the shilling must have been moved; but the man who filled the water into the basin would know it had not been moved. You know, too, that a straight stick dipped into the water appears crooked in this way. Well, the attraction by the difference of the media of water and air is well known; it is as 3 to 4; and the difference between glass and air is as 2 to 3. I am not clear that I tell you exactly, but it is computed, as you will find, that the eye may reflect in this way.

There is another cause of the alteration of the course of the rays of light. If they impinge upon a convex body, those which touch the greatest convexity of it will suffer no alteration in their course, but those which fall on the sides of it will of course be attracted by the convexity of the body; they will be nearer to it in one point than in another; they will be bent inwards, as the phrase is, and all the rays will thus be brought to a point.

Now the degree of refraction from the convexity of the body is ascertained; they say, if you complete the circle, the point of convergance, the focus will be at one semi-diameter of the circle behind. This is the way they have calculated the refracting power of convex bodies. You know it is this power, for you have seen the effect of a burning glass in bringing light to a focus. Well, the rays of light come to the *cornea*, which reflects them partly on account of its convexity, and partly on account of its concavity. A great deal of light falling on the cornea impinges on the angles of it, which will be reflected again, and that is the reason of the glistening of the cornea. It is only a certain quantity of light that will go through the cornea; from that a great deal of light will go to the *iris*, and will be reflected from it again, and this is the reason why we see the iris in some persons more than in others. It is only that cone of light that goes into the *pupil*, and then falls upon the *crystalline lens*. Well, then, the rays of light will be brought to a focus; but as to saying where the focus is, I suppose that that is more than any man can do; but the rays of light are brought to a focus behind the crystalline lens, and they are separated and decussate and arrange themselves upon the *retina*, exactly in the same order in which they proceed from the different objects we see. Thus, if a ship were the object I saw, it would be represented on the retina, but inverted; the masts would be downwards and the bottom upwards.

Now the eye has all those powers, so that it is a most perfect and complete *camera obscura*, which any one may satisfy himself of, by the following experiment: Take off the back part of the *sclerotica* of an animal's eye, and part the vitreous humour with thin paper, then present the eye to certain luminous objects, three candles, for instance, in a room otherwise dark, and you will see the flames of those candles most beautifully depicted on the paper, with their tops turned downwards, glimmering and moving, just as the flames do. O, it is a complete *camera obscura*. You have seen those cameræ obscuræ where the landscape, or whatever it is, is depicted upon paper, most accurately and vividly done. The eye has those powers of so refracting and bringing to a focus the rays of light, that they, afterwards separated, will arrange themselves on the retina, in precisely the very same order in which they emanated from the different surrounding bodies. But the retina *feels*, it don't *see*. In the common camera obscura, we are obliged to use another glass to correct the inverted position of the object. The retina feels, it don't see; but as there is no correction for the inverted position of the object in the human eye, why it has entered into the heads of some persons to suppose, that we really see things *topsy turvey* in the first instance, and correct this error by experience. Now that is a very strange opinion, and a very absurd one. We always believe the rays of light to come in a straight direction from the object to the retina, on which they impinge; and suppose the rays of light from the Gentlemen now in the gallery were to impinge on my retina, and produce an impression by which I knew they were there; and suppose I saw that hat which now lies on the ground, on the top of my retina, the impression causing me to believe it was on the ground, would my eyes in all that deceive me? Do not the rays come in a straight direction? We know they do. My belief is, that the rays come in a straight direction from the object to the retina, and that is as it should be; the reason of it is, to give us our knowledge of the objects, which it unquestionably does. Well, there is one thing with regard to the eye which nobody understands: the eye is a correct camera obscura, when the object is placed at a certain distance from it; but if you were to approximate the paper to the candles, for instance, the flames would become indistinct at once. There is no adaptation in the dead eye to objects, but there is a great adaptation to them in the living eye, and how this adaptation is produced, I believe nobody understands.

I have talked of the elasticity of the cornea, and the convexity of the eye. Mr. Ramsden, who was a very clever man, an instrument maker in this town, did contrive an instrument by which he could try the sphericity of the cornea, so that when a person was looking at one object here, at another there, and at a third in another place of the same room, he could tell which object the person was looking at, by observing the sphericity of the cornea; but that is not sufficient, and therefore some people have been induced to suppose, that the crystalline must be moved occasionally, or that it had power to alter its sphericity. All this is hypothesis.

Now when I speak of each organ of sense, I always take occasion to note those circumstances, with relation to sensation in general, which that organ is most calculated to display; and with regard to the light, we must see how subtile, how very subtile indeed are our senses, when capable of having vivid sensation produced from such wonderfully minute matter—by the atoms of light. So it is with regard to *sound*: what wonderfully subtile matter must that be, and yet what vivid sensation does it produce! There cannot be a question but that there is some subtile matter vibrating through the air which is the cause of sound. It has

many affiniti es to light. Sounds cross each other without intervening, just as the rays of light do. But I say, the subtilty of our perceptions, and yet I do not dwell much upon that point, the matter produces actions on the nerves—produces some vibration in the nerves by which the action is propagated to the brain, and thus are we able to perceive why very vivid sensations often take place from the slightest impulse, and why, at other times, the most powerful impulse fails to produce a sensation. A man may be shot through the body and not feel it. It has been said, that a man has had his leg shot off, and that he never knew it till he attempted to take a step. (*Laughter.*) Again, the slightest *odours*, or any thing of that kind, often produce most powerful sensations on the *cerebellum*.

Now that there are those actions produced on the eye is perfectly clear. It was to this subject Dr. Darwin bent his attention, when he affirmed this piece of physiological information, which I believe now is commonly received, that sensation does not depend upon impression made upon the nerves, but upon actions excited in them. There are some people who sleep with their eyes open; and a man may stand before another man in such a situation, with a lighted candle in his hand, so that the image of that person who has the light may be vividly depicted on the retina of the sleeping man; but does he see—is he sensible of it? No. Arouse the slumberer, awake him that sleepeth, bring but the natural excitement into his nerves and muscles, and he would exclaim, "God bless me, how came you here at this time o'night?"—(Laughter.)

But this is the point; it is the consideration of *ocular spectra*. But what's meant by ocular spectra? O, you know; you must have remarked, that if you look at the setting sun for some time, so as not to fatigue your eye, and turn about—turn to the East, you will see a ball of fire before you. O, you will see the spectrum of the setting sun. But say you have looked at the sun till you have tired the eye—completely tired the eye, and then turned to the East, what would you see? Not a globe of fire, but a round, black ball. You will still see the *spectrum* as far as related to *form*, but not as far as related to *colour*; and it is very curious that you may look at scarlet till you tire the eye, and then that it will appear green; and that you may look at green till it appears scarlet. It is the reverse of the colours that appears. You look at the window, and if the eye is not fatigued, and you take it away, you will see the spectra of it; but if it is fatigued, and you continue it, the light part will appear dark, and the frame-work will appear bright and light. These things you must have observed; perhaps you may not have reflected on them, but it is the reflection on them that leads Dr. Darwin to conclude that the retina perseveres in those actions which have been reflected on it, and therefore we observe the object which is no more before the eye; or the eye being fatigued by looking at it, you have another object, you have the spectrum as far as relates to form, but not so far as relates to appearance.

The eye of course is one of the organs which adapts the manifestation of the sense to the situation in which we are placed. A man may live in a dark place, and objects there may be very distinctly visible to him; whereas a man coming out of a very strong light can see nothing in the same place. This adaptation we know has been *expressed*, but I am sure I cannot say it has been *explained*. The vividity accumulates in proportion as the exciting causes accumulate, and diminish in proportion as the exciting causes diminish, but it has certainly not been explained.

Mr. Abernethy now described the *lachrymal* parts of the eye.

As to the *eyebrow*, I think you cannot fail to see that it is in the human species an organ of expression. I know that any painter would concur with me in this, for by a little arrangement in the eyebrow he can make a great alteration of expression in the face, and he cannot produce that alteration by the variation of any other single feature. No animals have this. And now you may think as you please upon this, but I have told you what I think of it, and that's all I can do.

Secretion and course of the Tears.—It seems all very beautiful that there should be this contrivance to besmear the tears equally over the whole front of the eye, and that there should be, too, the groove that we find here to convey away the surplus tears from the eye into the lachrymal bag! But the question is, What are the tears? Now any body making such an inquiry, would really surprise a person who had not reflected on the subject. What are the tears? Does not every body know what the tears are? One would think that a person who instituted such an inquiry, had never seen a *blubbering boy* with the salt water running down his cheeks. Aye, but are those tears? Those are tears to be sure, such as are shed from irritation or from sorrow, but they are not the *common* tears. They inflame the eye; they excoriate the very cheek down which they run. What are those salt water tears? O, they are the product of the lachrymal gland, which is lodged in a slight

fossa in the orbitary process of the *os frontis*. It is the property of these glands—the salivary glands, to secrete occasionally, and not continually, and to secrete profusely at times. This is the source of the salt water which is shed from grief, or when anything irritates the surface of the eye; but it is a kind of salt water not calculated for lubricating the surface of the eye, that you may be assured of. What are the common tears? Unquestionably a very lubricous fluid, to facilitate the motion of the eye-lids upon the front of the eye-ball—a mucilaginous liquor—a thin mucilage secreted from the whole surface of the concavity. That it is mucilage is manifest; for where it is abundant in quantity, and perhaps having a greater abundance than common, in consequence of inflammation, does it not *gum* the eyelids together. Have you not little follicules of gum which you may dissolve in warm water? I say it is a mucilaginous secretion, excellently calculated for preserving the front of the eye, and for preserving it moist, so that it may be transparent.

But, now, if they are mucilaginous, they might gum the eyelids together; they do; and here it seems that something is wanted to prevent this gumming and adhesion, under ordinary circumstances. Now, for that purpose, there is a row of glands and ducts situated beneath the lining of the eyelid upon the *tarsus*; they are called *ciliary glands* and ducts; they go also by the name of the anatomist who described them—*Meibomiæ*. You may press them, and you will force out of the orifices fine threads of oil—suety sort of oil, and this is to prevent the gumming. When those ducts do not perform their functions well—when there is that agglutination, medical men have been in the habit of painting this part with some ointment to stimulate the orifices of those ducts, to produce the natural secretion; and, undoubtedly, it is good to anoint the edges of the tarsus, because it does prevent the agglutination I have been speaking of.

Now, then, there is another good in the *tarsi*: the stiffening of the tarsus gives an opportunity for hair that grows from the very edge of the palpebræ, to arrange itself in a right direction—the eyelash. Were the tarsus not stiffened, the hairs would cross one another; but, as it is, the hairs must take their regular direction, and they project considerably beyond the apertures of the *eyelids*. Now, what's the use of these? O, they protect the eye against the approach of any foreign body; the eye is shut against anything approaching it with a celerity that's proverbial—*the twinkling of an eye*. And the excellence of this contrivance is very well manifested to you, by a common occurrence which you must be all acquainted with: a little fly in flitting through the air, it touches the eyelid, and the eyelid is closed upon it; the eyelid, in this respect, becomes an excellent *fly-trap*, which crushes the little insect to death in a moment.

But there is one thing more: when the eyelid is closed over the eye, when the superfluous tears have got into the groove made by the two tarsi, when the orbicularis presses the eye, and gives a torrent of tears towards the *puncta-lachrymalia*, there is a question, why the tears do not come out at the *internal canthus*, why do they go no further than those *puncta* which are to convey them into the nose? There is a projection here to prevent that, which is called *caruncula lachrymalis*. It is manifest in every eye. It is a little bit of fat rising up, to fill up an apparent vacancy. It was thought to be an organ of secretion; but we have now reason to believe that it's merely mechanical—merely placed there to prevent the tears from going beyond the puncta lachrymalia. In some animals it is covered by *cuticle*; I allude to the *horse*, and therefore it cannot be a secretory organ.

Another question which has arisen has been, whether the puncta lachrymalia transmit the tears to that which leads to the lachrymal bag, in consequence of the fluid being impelled by force through them, or whether they have the power of absorbing the tears? Now that the *orbicularis palpebrarum* muscle does jointly, with other powers, impel the tears on, is what we have reason to believe. If a person has a redundancy of tears, what does he do but shut his eyes, and gently press with that muscle, to get rid of them? But yet there is reason to believe, that there is that absorbing power. *Dr. Fullerton* was convinced they had this power; and I think it reasonable to believe that they have the power of absorption.

And now I have done. I have told you of all the circumstances—of all the artifices which Nature has employed for lubricating the front of the eyeball, and keeping it continually transparent. In no other part of the body have you such a series of contrivances, the uses of which you so well understand. Every thing seems required, and every thing required is met with, and every thing met with seems to be admirably adapted to its function; so that I cannot but think that the lachrymal parts of the eye may serve as an instance of the effects of a designing cause, operating in the formation of Nature's works. However, I have done for to-day.

INTRODUCTORY LECTURE

TO A

COURSE OF SURGERY,

Delivered at the Richmond Hospital by

Mr. CARMICHAEL,

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS, DUBLIN.

GENTLEMEN,—It was my intention at the opening of this school to have given you my sentiments on the present state of medical education in this country, and the improvements of which I considered it susceptible; to explain the plan we purposed to pursue in this establishment, and to subjoin some hints on the most advantageous mode of pursuing your professional studies. But unfortunately, on the very eve of our undertaking, I was disabled from appearing before you by one of those unexpected and unwelcome visitations, which so rapidly bring the life into jeopardy, and to which the medical profession are so peculiarly and necessarily exposed.

But I have to thank you warmly and sincerely for the kind and affectionate interest you took in my recovery, and now, at the earliest day at which I feel myself adequate to the task, I come to redeem my pledge to you and to the public.

My colleague, Dr. M'Dowel, by a strange copartnership in misfortune, was at the same moment also rendered incapable of contributing his valuable assistance by a similar, but I am happy to say, a slighter, attack of fever. So that nothing could be more inauspicious than the commencement of our school. Mr. Adams, however, stood in the breach—the school was opened at the time announced, and notwithstanding the disadvantages we encountered, we feel ourselves already supported to an extent which few recent establishments can boast. We are now about to enter upon the surgical part of the course, and I shall take this opportunity of enforcing the several topics, which have for some time occupied my mind, and which I think most worthy of engaging your attention.

The several new schools of medicine which have of late made their appearance in this metropolis, tend in some degree to evince that the odium attached to Irishmen in not availing themselves of the local advantages which their country affords, cannot with justice be affixed to the surgical profession. The surgeons resident in Dublin, however small in number, it must be admitted, form a remarkable and praiseworthy exception to an imputation which I fear is too universally true with respect to their countrymen. It is only now, however, that medical men seem to open their eyes to the advantages which Dublin affords for the establishment of medical schools; advantages which are far superior to those of any other city in the empire. We abound with dispensaries, hospitals, and charitable institutions of every description, calculated to alleviate the various maladies entailed upon man; and without which a city like Dublin, with a pauper population perhaps exceeding in proportion that of any other city in the world, would soon become one vast scene of desolation. But as it is the wise dispensation of Providence to make "good arise out of evil," let our profession but avail itself of those local advantages which this metropolis affords, and we may turn the very poverty and disease with which it abounds into blessings of the highest importance, by affording to the empire an annual supply of well-informed medical practitioners, which no other part of the united kingdom could educate equally well at the same moderate expense.

The difficulty of prosecuting anatomical pursuits in the sister country, induces vast numbers to seek that information in foreign states which cannot be obtained at home; but if the advantages of Dublin as a school of anatomy and medicine were once sufficiently known and promoted, no longer should we find pupils emigrating to distant countries to acquire at a great inconvenience and expense that information which is to be obtained on the most economical terms, in the second city in the empire; and which at the same time contains within itself opportunities for the acquirement of every branch of professional knowledge.

There are twelve respectable Hospitals, among which we boast of a Lying-in Hospital, not equalled in the world for extent, magnificence, and utility. Two extensive botanical gardens, with a professor of character and learning attached to each. Two public lecturers on chemistry, the one, the learned Professor of Trinity College; the other of the Dublin Society; and also several private lecturers on chemistry. Beside the schools of medicine conjointly formed by the University of Dublin and the College of Physicians, and the School of Surgery of the College of Surgeons, there are three or four private schools, each containing professors in every branch of medicine; and I trust, ere long, many others will be added to the number; for we are not to consider that the great advantages which this city affords for the promotion of medical education, are to be restricted to

that of raising practitioners for this country alone. We have the means, if we cultivate them as we ought, of educating medical men, not only to supply the wants of Ireland, but a great proportion of those destined for the Army, Navy, the Colonies, and I will say, for England itself; for even to England I am persuaded we shall be enabled to supply individuals *superior* in professional acquirements to those who in general fill the ranks of that most useful class of men, the surgeon-apothecaries; to whom, in a great measure is consigned the chief medical, surgical, and pharmaceutical practice throughout the great, wealthy, and populous provincial towns of this part of the empire. In making this assertion, I do not speak unadvisedly and without consideration. The expense of attending an Hospital in London (an attendance on provincial Hospitals is not acknowledged by the London College) is on the lowest average, probably three times greater than that demanded from a pupil for attendance upon the large institutions in this city. Edinburgh, though more economical than London, does not contain an Hospital establishment, or a population sufficient for the purpose of extensive chirurgical or even medical education. The expenses attending anatomical pursuits in London and Edinburgh, from the difficulty of obtaining subjects, is at least six or eight, and not unfrequently even ten times greater than in Dublin; often it amounts to an absolute prohibition. So that I feel warranted in my assertion, that the pupils educated in England and Scotland, from the great expense of acquiring anatomical information, are not in general sufficiently grounded in what may be considered the very foundation of medical and chirurgical knowledge; and without which, the superstructure, however ornamental, must be frail and tottering. But the advantages of Dublin, as a school, are already beginning to be known and felt in the sister kingdom. During the Peninsular war, the superior anatomical, and of course, chirurgical, knowledge of those army surgeons educated in Dublin, soon attracted the notice of the distinguished individual placed at the head of the Army Medical Establishment; and with a conscientious and honest discharge of the high trust reposed in him, he advanced those men in rank and responsibility, upon whose professional knowledge, when so much was at stake, most reliance could be placed, no matter what was their previous patronage, country, or religion. Those alone were selected who were most capable of affording the best chance of life or limb to the wounded soldier; and in consequence, numbers of our countrymen, educated in this city, and filling subordinate situations in the army, were advanced with rapidity to posts of responsibility, rank, and emolument. This naturally opened the eyes of many to the superior advantages afforded by Dublin for the acquisition of surgical and anatomical knowledge; and we have had consequently, since the war, a number of pupils from England and Scotland, annually resorting to our schools; a number, which I shall venture to predict will every year increase.

Unfortunately, our own foolish ordinnations have interfered to mar the progress of Dublin as a school of anatomy and surgery. It is natural, and a matter of course, that pupils should wish to receive their diplomas of qualification from those constituted bodies under which they have been educated, and from the hands of those professors and seniors who have observed the progress that each has made in the acquisition of medical and surgical knowledge.

This very natural and laudable desire is completely baffled by the Charter of the College of Surgeons in Ireland, which enacts that no person shall be admitted to an examination who has not served an apprenticeship to a regularly educated surgeon; and this is the *only test* of qualification demanded from the pupil by this corporation charter. *No* attendance upon lectures, *no* attendance upon hospitals, *no* dissections, are required by the framers of this wise sample of legislation; and, in fact, at this very moment, in point of law, the President and Examiners are bound to examine any man, no matter whether he has ever been inside the walls of an hospital or lecture-room,—if he has only served an apprenticeship to what is designated a regularly educated surgeon, he may demand an examination.

But the framers of the Charter forgot in their wisdom to define what are the qualifications which render a man a regularly educated surgeon. Their successors, I presume, taking it for granted that the only qualification to make a regularly educated surgeon is an apprenticeship to one, demanded from every pupil who had not been an apprentice to a Licentiate or member of the College of Surgeons in Ireland, sufficient documentary evidence that his master not only had been a regularly educated surgeon, but that he had also served *his* time to a regularly educated surgeon; and thus I have known the time of the Court of Examiners occupied, day after day, examining the genealogy of a candidate, even to his professional *great great grandfather!*

It is high time for these follies to cease; the spirit of information among the rising generation of surgeons would not brook them a moment, were it not that their own interests are concerned in perpetuating a bondage under which they themselves have suffered.

To the credit of the leading men of the profession, an attempt was made within

these two years to induce the College to petition Parliament for a new Charter, the basis of which was to annul apprenticeships, and, in lieu of them, to lay down a broad system of education in the various branches of medical studies; and that documentary evidence of attendance upon lectures, dissections, and hospitals, should be the only qualifications demanded from the candidate.

Will it be credited that these projected improvements, which would *tend* to raise surgery from the state of a mechanical trade to a level with the liberal professions, were rejected by a majority almost entirely composed of the younger members of the College. While, at the same time, with scarcely an exception, these most desirable improvements were supported by the senior members. Men who were in the actual enjoyment of the advantages which the system of apprenticeship affords, while those who opposed the projected alteration in our Charter, could only have held them in prospectu, and most of these unlikely, from the want of hospitals, ever to have enjoyed them. But, Gentlemen, I trust that this degraded state of a liberal profession, requiring for its practice an expanded mind and extensive information, and allowed to be one of the most useful and honourable which falls to the lot of any body of men to exercise, cannot, whatever be the opposition excited by interested and mercenary motives, much longer continue to be debased to a level with the mere mechanical arts. I appeal to my young hearers, who, in the course of a very few years, will have a voice in the affairs of the College,—will they, from the sordid prospect of the chance of putting a few additional pounds in their pockets, perpetuate this degradation of themselves and their profession? Is there one of you, with the liberal education you have received, that does not feel humbled by the necessity of submitting to the yoke of an apprenticeship, which is altogether useless to the master to whom you are indentured, (except so far as the fee is concerned,) and to yourselves for the acquirement of professional knowledge. Would you not, if this base and unnecessary yoke were removed, walk more erect, and hold your heads more high, among those juvenile friends who are pursuing their studies in the other liberal professions?

Notwithstanding the absurd method by which the College of Surgeons in Ireland undertook to provide, through the arrangements of its Charter, which was granted them in 1784, regularly educated surgeons for the community, the profession made rapid advances afterwards, partly owing to the institution of a school of anatomy and surgery under the auspices of the College where none before existed, and partly to the necessity imposed on every person intending to practise surgery, to undergo the ordeal of a public examination. But a great deal must be attributed to that simultaneous effort which appeared at this time to take place all over Europe for the improvement of anatomy, physiology, and surgery, and to which Mr. Pott, Doctor Monro, sen., Haller, and the two Hunters, so largely contributed.

Under these circumstances, the state of surgery could not but improve in this country. But this improvement cannot with any reason be attributed to the system of apprenticeship without other qualifications; and which manifestly prevents numbers from availing themselves of the advantages which Dublin affords as a school of medicine in all its branches. For it is a fact, that at least twenty-nine out of every thirty who receive their professional education in Dublin, are obliged, in consequence of the stipulation contained in this Charter, to seek, in another country, the qualifications which entitle them to practise; a circumstance which tends to put money into the pockets of the examiners of other colleges, and to impoverish still further this impoverished land.

When we take a survey of the various public charitable institutions of this populous city, there is not one which can compete with the House of Industry, and its extensive hospital establishment, for the purposes of a medical school.

This Institution, although still called the House of Industry, has altogether changed its character from its original formation. It may now be considered a vast hospital for the admission of those who, from chronic disease and bodily infirmities, are incapable of obtaining a subsistence; and contains, exclusive of those in its hospitals, a population of 1503 persons. It has attached to it three distinct hospitals: a Fever, a Medical, and a Surgical Hospital. The hospitals combined, contain, at present, 452 patients. There is also a Dispensary attached to the Institution for the poor of the north-west district of Dublin, at which the averaged number of patients prescribed for daily, amounts to 150.

The ruptured poor of the entire kingdom are supplied with trusses at this Institution; and the averaged number supplied, amounts to forty every month. Those seeking relief in any department of this extensive establishment, require no other recommendation than the pressure of disease. The entire is supported by parliamentary grant, at about the averaged expense of 20,000*l.* per annum. As a government institution, it ought to have a school of medicine attached to it; even the despotic governments on the continent institute hospitals for the mere pur-

pose of educating military surgeons. Surely, then, the paternal government of a free country must naturally be disposed to encourage the establishment of schools of medicine in all hospitals supported out of the public funds, in order not only that the army and navy, but the community at large, should be benefited by them to the fullest extent.

This school is, however, undertaken altogether by those individuals now associated to teach anatomy and surgery within these walls; and I regret to observe, that their exertions met with most opposition where they ought to have received the greatest encouragement. Let me not be understood as alluding to the Government, whose kindliest influence has long shone upon those institutions; but to certain clouds in our atmosphere drawn up by its rays, as if only to intercept them.

Lectures, in my opinion, to be useful, should, as far as possible, be demonstrative; if they are not so, the learner, in the quiet seclusion of his study, has a better chance to acquire the knowledge he seeks in reading and pondering over good authors. Therefore, in our Surgical Lectures, it is our intention to illustrate the subject under consideration by a reference to such cases as happen to be at the time in hospital, and to which the majority of our auditors will probably have access; and when no living example of the disease in question is present, we shall endeavour to illustrate our observations either by drawings, casts, or morbid preparations.

Extensive and momentous information in our profession is, no doubt, to be derived from books and lectures; but recollect, that you do not *see* the diseases you are to treat in either, and that you only receive an account of them through the medium of others, who, at the same time that they give you the fruits of their experience, are liable to exaggerate, or misrepresent, the symptoms they describe, so as to make them meet some preconceived notions, or favourite hypotheses, which had taken possession of the author's or lecturer's mind. For this reason, if there was no other, learn from your outset to observe in hospitals the characters and symptoms of diseases with your own senses, and do not give up the evidence of them, contrary to your judgment, to any man, no matter how high his authority or rank may be.

Hospitals not only afford an opportunity of acquiring Pathological, but Physiological, knowledge. Instance after instance occurs; and the process by which a wound or a bone unites, must make any reflecting mind anxious to learn the steps by which the living machine produces these results, and examine the wonderful complexity of the animal economy, and how admirably each organ is adapted to the performance of its peculiar functions.

The Skeleton may be considered as the frame-work of this complex machine, in which we cannot too much admire the skill displayed in the structure, relative direction, and connexion of the bones, so as to combine strength and firmness with an arrangement that permits the most complicated movements with little risk of displacement.

The astonishing powers of the Muscles which move the bones, next attract our admiration, which, although they are inserted almost every where in the most disadvantageous manner, produce the surprising effects we witness; but there is so much power to spare that it is every where sacrificed to convenience of form and celerity. Thus, the biceps muscle, as it is inserted in the human arm, acts like a man who endeavours to raise a ladder on its nearest end by applying his force to its lowest rundle.

As the motions of the body would be much impeded were the muscles every where inserted into bones, Tendons have been constructed, which connect the muscles to the bones, and which may be considered as so many passive chords of great tenacity and strength; but, notwithstanding their strength, they very often give way to the power of the muscles; thus the strongest in the body, the tendo-achillis, is frequently ruptured, and becomes an object of surgical interference. You have all heard of the celebrated French dancer, who ruptured both at the same moment in a violent exertion, and fell instantly powerless upon the stage. The four wild young horses are equally familiar to your recollection, which were affixed to the extremities of the unfortunate Damian, who was condemned to this unheard of mode of execution for an attempt to assassinate Louis XV., which, although urged during fifty minutes to their utmost exertions, could not tear asunder the limbs of this miserable being until assisted by the knives of the executioners. These striking but oft repeated instances, sufficiently evince the powers which the Creator has bestowed upon living animal matter.

Now let us turn our thoughts a moment upon the medium by which the Mind is enabled to act upon and command this powerful machinery.

The instruments by which the mind acts are the brain and nerves. The different organs of the senses—those of sight, hearing, smell, taste, and touch—connect us with the external world, and impressions made upon the peculiar nervous tissue of these organs are conveyed to the brain through the medium of the nerves. Where they

excite sensation and perception, a propensity or appetite may be excited; volition follows, and the command is conveyed along the nerves to the parts required to act. The subserviency of the nervous chords to convey the dictates of the brain is proved by experiment, accident, and disease. If the nerves going to certain muscles are divided or injured, the brain loses its influence over these muscles. If the brain be compressed, as occurs in violent injuries to the head or in apoplexy, *it* loses its power of affecting the voluntary muscles; while the involuntary, as we shall presently see, are independent of the will for the most obvious reasons, and continue to perform their functions long after all voluntary movements have ceased.

The involuntary muscles, such as the muscular coats of the stomach and intestines, and all the organs subservient to digestion, circulation, respiration, and the secretions, whose actions are necessarily incessant, and therefore ought to be independant of the will, are supplied by nerves which proceed from ganglions, or peculiar expansions of the nervous substance. These nerves, from their functions, are termed the nerves of organic or vegetative life, and the honour of this discovery is usually ascribed to Bichat. There is, however, an exception to the rule that involuntary muscles are supplied exclusively by ganglionic nerves; the par vagum, a large portion of the eighth pair arising from the brain, is distributed to the stomach, a circumstance from which I should only be induced to infer, that it is like the diaphragm, which derives its nerves both from the spinal and ganglionic systems, a muscle of a mixed kind, being partly voluntary and partly involuntary in its actions. The voluntary action of the stomach is seldom seen in the human species, although many instances are detailed of individuals who possessed a power of regulating at will its contents;* but such a power exists in the tribe of ruminating animals, and all the mammalia seem to be formed after a peculiar model, but this model modified according to the particular wants of the animal. The influence of the mind over the stomach is apparent in all human beings, from the effects of mental impressions upon that organ. A man will sit down to his meal with an excellent appetite; an afflicting piece of news arrives, and his appetite immediately leaves him. The immortal Shakspeare, from whom no secret of human nature seems to have been concealed, has finely exemplified this in the conversation which occurs between Henry VIII. and Cardinal Wolsey. When the king communicates his determination to disgrace him, by putting his own intercepted dispatches into his hands, observing,

"Read o'er this;
And, after, this: and then to breakfast with
What appetite you have."

The heart, whose actions are so independent of the will, has branches of nerves also from the eighth pair, which sufficiently accounts for the immediate influence of mental impressions on the actions of the organ. Instances are even related of individuals who could, at will, influence the actions of the heart.

That the ganglionic system of nerves is the seat of organic or vegetative life, we should infer from the rapidity with which the powers of life seem to sink, when those organs on which the ganglionic nerves are distributed are assailed by external violence, inflammation, or spasm. A smart blow on the pit of the stomach (which is also the situation of the centre of the ganglionic nerves, the celiac ganglia and plexus) will often produce death, as instantly as if the person had been struck by *lightning*. It has fallen to my lot to have seen five or six cases of death from rupture of portions of the intestinal canal, and consequent effusion into the cavity; and in all of them I was impressed by two circumstances—1st. The rapidity with which the powers of life seemed to sink, long before inflammation had time to make any apparent advance; and 2ndly. The little disturbance which the cerebral functions seemed to receive by a shock which took away the life of the individual in a few hours; for I have observed those persons converse and reason with the same facility as when in the enjoyment of perfect health; and I have even heard one individual jest on some passing occurrence within a minute or two of his dissolution, a circumstance which proves how little the brain, and the system of nerves immediately arising from it, were affected by a cause capable of rapidly destroying life, and evinces the great difference between the ganglionic and cerebro-spinal system of nerves. Until lately it was supposed that the same nerves proceeding from the spinal marrow, performed the double office of sensation and motion; it has, however, been proved by Mr. Charles Bell, (a discovery which reflects upon him the highest honour,) that the posterior fasciculi of nerves proceeding from the spinal marrow, are the nerves which afford the property of sensation to the parts on which they are distributed; and that the anterior fasciculi, on the contrary, give the faculty of motion. These facts are proved by experiments, which have been repeated with similar results by Magendie and others.

* Doctor Gosse, for instance.

The nerves of the other senses, as well as that of touch—those of sight, hearing, taste, and smell—all have separate origins from different portions of the brain. Since then, we find each portion of the nervous system has a distinct and appropriate function to perform, we are in some degree prepared for the proposition of Gall and Spurzheim, that the entire mass of the brain is not engaged in every mental operation, but that different portions of this viscus have their allotted functions. To such of you as have a wish to be acquainted with the Phrenological doctrines, I would strongly recommend you to read, at your leisure hours, the admirable work of Mr. George Combe, which has already gone through several editions. You will, after perusing this work, feel the littleness of those who scoff at a subject of which they are ignorant. An article, supposed to come from the pen of Mr. Jeffrey, appeared in the Edinburgh Review of October last, in which he attacks the system with all the weapons of an experienced controvertist. This drew forth from Mr. Combe an immediate, spirited, and most triumphant reply, in which he not only answered all his adversary's objections, but convicted him of unfair dealing as a critic, ignorance of the subject he undertook to criticise, little depth as a metaphysician, and but slight acquaintance with the opinions even of the school he supports. Phrenology, as defined by Mr. Combe, "is a system of philosophy of the human mind, adapted to explain the primitive *powers* of feeling which invite mankind to action, and the *capacities* of thinking that guide our actions till we attain the object of our desires."

Hitherto, philosophers and metaphysicians have considered the mind as uninfluenced and unconnected with the body. They have treated "the thinking principle as a disembodied spirit." The phrenologist, on the contrary, "regards man as he exists in this sublunary world; and desires to investigate the laws which regulate the connexions between the organs and the mind, but without attempting to discover the essence of either, or the manner in which they are united."

After the lapse and labour of more than two thousand years, metaphysicians are not yet agreed concerning the existence of many of the most important principles of action and intellectual powers of man. Instead of obtaining rules by which to discriminate the effects produced upon the character and conduct of individuals, by different combinations of the mental powers; we find the works of philosophers on the mind, to be only a never-ending series of disputes, whether such differences do exist in nature, or are the result of education and other adventitious circumstances. Gall and Spurzheim have ascertained from observation, *primitive faculties of the mind* so simple, as not to have been thought of by the philosophers of the old school; and they conceive that they have also from observation ascertained the parts of the brain, where each primitive faculty resides. It would lead me too far to enter deeper into a consideration of this interesting subject. Suffice it to say, that it is a study closely connected with the various applications of medical knowledge, and therefore well worthy of the attention of the scientific practitioner. Their mode of dissecting the brain is, however, I am bold enough to say, the only one that ought to be pursued, and will be that adopted in this school. The old method we will of course show you, as long as you are likely to be examined in it, although we might as well engage to dissect the muscles of an extremity by cutting them across, as to demonstrate the nervous fibres of the brain according to the old, and, I am confident I shall soon have the opportunity of saying, obsolete method.

Many imagine, that if a surgeon is acquainted with anatomy, and the treatment of fractures, dislocations, ulcers, tumours, and other affections of the surface of the body, that he is qualified to practise surgery; nothing can be more fallacious than such an opinion, for even to be able to treat as he ought external affections, he should be well informed respecting the diseases of internal organs, and capable of ascertaining how far the external affection is connected with, or symptomatic of, the internal disease. There is scarcely an eruption which occurs on the skin, which is not more or less dependant upon internal derangement, chiefly of the chylopoietic viscera, and to be enabled to treat the former with any kind of success, our remedies must chiefly be applied to remove the derangement of the latter. Suppose a question should arise respecting the propriety of amputating a cancerous breast, or removing an extremity on account of a diseased joint; no well-informed surgeon would venture on such an operation without an attentive consideration of the general state of the constitution, and of the internal organs, but of the lungs in particular. If he is so ignorant as to do so, he is unfit to practise our profession.

Compound fractures and severe injuries are constantly followed by symptomatic fever, which may be attended with pain in the head or chest, delirium, or dyspnœa; all these symptoms surely require in the attendant a knowledge of the general treatment of fever.

If a surgeon is called upon to perform the operation of tracheotomy in a case of croup, before he assents to so decided a measure,

is he not to inquire into the symptoms with which the patient is at the time affected. If he finds that such symptoms exist as point out the distention of the trachea and bronchial ramifications with coagulable lymph, or frothy mucus, surely he ought not, at the dictum of another, to perform an operation which must be useless, and calculated only to bring disgrace upon himself and his branch of the profession. And to decide upon this and other questions connected with the propriety of tracheotomy, it must be acknowledged, requires in the surgeon information respecting all the diseases to which the throat and chest are liable.

If a surgeon is called to a case of acute ophthalmia in a patient labouring under gout or rheumatism, if he has not these diseases in his mind, he may render very ineffectual aid to his patient, under the ordinary methods of the treatment of simple ophthalmia. The inflammation of gout often attacks, in its most acute form, the conjunctiva of the eye; but on the recurrence of the inflammation to the foot from which it had receded, that of the eye as rapidly disappears. Here, then, in the first instance, the business of the surgeon is, by hot fomentations, and irritating applications, to bring back the inflammation to the feet—to exhibit colchicum, and those means most capable of removing as rapidly as possible, a dangerous inflammation from a part essential to the future comforts of the patient, even though the means employed may not benefit the general disease. Then surely the surgeon, to be enabled to treat such a case, ought to have a knowledge of the nature and treatment of rheumatism and gout.

But take the converse of the proposition—If a physician is ignorant of the sympathies and general disorder of the frame, of which even a simple stricture of the urethra is capable of exciting, is he fit to practise his part of the profession? The shiverings and the sympathetic derangement of the stomach and liver, and various indescribable ailments, termed nervous, he would be incapable of tracing to their source, and, therefore, by mistaking the cause, not only neglect the true mode of relief, but fill his patient's stomach with a farrago of drugs, which could not possibly do good, while the cause of these symptoms remain undiminished.

A gentleman called on me with enlargement of the testes, such as Mr. Ramsden terms schlerocele, which I soon recognised as depending upon the irritation of stricture of the urethra. Instruments were used which removed the stricture and swelling of the testes, and at the same time, to the astonishment and delight of the patient, a train of dyspeptic and nervous complaints were cured, from which the patient had been teased for years, and for which he had been in the hands of more than one *pure* physician.

If a physician, when called upon to see a patient labouring under colic, or obstruction of the bowels, or the symptoms of abdominal inflammation, is ignorant that these symptoms may proceed from hernia, he loses his patient and his reputation together.

Long continued derangement of the stomach and bowels produce hæmorrhoids; is the surgeon to whom the treatment of this disease is usually consigned, only to treat the effect, and not to look to the cause? If he does so, he is only half informed, and not likely either to benefit those who confide their health and life in his hands, or his own reputation. But it is unnecessary to multiply examples of this kind, which crowd themselves upon my recollection; sufficient has been said to convince the most sceptical, that the division or the healing art into physic and surgery, which took place in rude and half civilized times, can by no means afford an excuse to the man who may wish to confine his practice to the one for remaining in ignorance of the other. On the contrary, I should go so far as to say, that he who imagines himself, as it is termed, a *pure* surgeon, or a *pure* physician, and contemns as unnecessary, or perhaps degrading, the information of the sister branch, is UNWORTHY OF THE PUBLIC CONFIDENCE, *even in that department which he has adopted as the peculiar field of his practice.* Let me, however, not be misunderstood, or that I underate the advantages that society derives from a division of labour; all I contend for is this—that the fundamental information, and the course of studies, ought to be the same for both physician and surgeon, and that after a person thus qualified has undergone an examination in anatomy, physiology, chemistry, materia medica, and the principles and practice both of physic and surgery, that *then, and not until then,* SHOULD HE BE ALLOWED TO PRACTISE IN EITHER BRANCH. In large cities or communities, men will naturally fall into either one branch or the other, according as either inclination or the public voice, or chance, which, as often as selection, fixes our lots in this world, may determine.

But in smaller communities and towns, the same individual must practise the healing art in both its branches; and if he is only acquainted with one, I leave it to yourselves to imagine the embarrassing difficulties which his ignorance must entail upon him, and the injury he may inflict on that portion of the community, in which he has allocated to himself so important a station.

As it happens, we should imagine, in opposition to the decrees of the VIRI GRAVES ET DOCTI at their "grave and solemn meetings," that the external surface of the body allotted to the dominion of the surgeon, is supplied with branches of the same identical nerves, the same blood-vessels, and the same absorbents, that go to the more noble or important internal organs, which fall into the physician's net, and that they are both governed by the same laws, and that there are actually no diseases that affect the one which do not influence the other. How, in the name of common sense, does it happen, that even this imaginary line of demarcation between physic and surgery, was established by the wisdom of Colleges and Universities, so that the individual who is to practise one branch, may, *if he can*, be ignorant of the other; and that this line of demarcation is, in fact, in this very city, and at this improved period of science, if report be true, so far insisted upon, that a knowledge of surgery is even deemed a disqualification for the practice of physic; for, on no other principle can I imagine a by-law, or regulation, of the King and Queen's College of Physicians to be framed, (if it be possible such a by-law can exist,) which will not admit to the test of an examination, any individual who is a Licentiate or Member of the College of Surgeons in Ireland, until he has qualified himself (to use an Irishism) by a disqualification, i. e. by removing his name from the roll of the College of Surgeons.

Thank God, whatever follies exist in our own body, and I have freely exposed them to view, there are none commensurate with this. On the contrary, I am happy to perceive, that almost all of our junior Members and Licentiates take degrees in medicine in those Colleges from which they are not excluded. Thus realising what the interests of society demand, but which the littleness of chartered bodies have hitherto prevented, I shall say, in subversion of the very spirit of this charter. And I am persuaded that the period cannot be far distant, when the two branches of the healing art, which were dissevered in rude and ignorant times, will again be reunited, at least so far as that the fundamental education for both shall be the same.

Impressed with the absolute necessity of grounding the pupil in the principles as well of physic as surgery, the founders of this School have appointed, with themselves, a Professor of the Theory and Practice of Medicine, and also a Professor of Chemistry and Meteria Medica. The qualifications of Dr. Cummins and Mr. Donovan, to fill the important offices they have undertaken, are already well known and duly appreciated by the public.

I have, hitherto, Gentlemen, engaged your attention, in a great measure, with observations on what may be termed the political economy of schools of physic, and particularly of those of our own country. A subject which many, perhaps, will esteem foreign to the observations which ought to be addressed to pupils about to enter upon the medical profession. But, I considered that details which unfold the state of that profession which you are going to adopt, the alterations which appear to me to be required, in order to obtain that degree of perfection in the healing art of which it is susceptible, could not fail at present of exciting an interest in your minds, perhaps hereafter, of inducing those necessary improvements I have suggested.

I shall now, therefore, conclude this lecture with some brief observations applicable to the best mode of acquiring the necessary degree of information in the various and laborious studies you will have to undergo, before you are fitted for the ordeal of a public examination, or to practise your profession with a conscientious feeling, that you have not undertaken the performance of duties to which you are incompetent. Your first occupation will, then, be to acquire a knowledge of anatomy, which may be esteemed the very basis of medicine and surgery. Without a knowledge of anatomy, you will feel inadequate to treat the most common surgical case, and in the majority of instances in which a member of our profession has happened to disgrace himself, it may be traced to his ignorance of this foundation of his art.

Although books and lectures will assist, a true knowledge of anatomy is not to be acquired from either; you must patiently dissect from day to day, from month to month, and even from year to year, the various parts of the human body. You must consider their texture, and above all, as a surgeon, their relative situations; although all parts should be seen and known, some require more attention than others; for instance, the course of the large vessels and nerves along the neck and limbs, and their relative situation to the muscles, so as that the latter may serve as a guide to the surgeon when he may deem it expedient to cut down upon the former. The viscera of the pelvis, and their relative situation both in male and female: the important parts situated in the axilla, groin, bend of the arm, and behind the knee, cannot be too accurately or too often considered.

Among the parts of surgical anatomy which require the close attention of the practical surgeon, that of the joints is of the highest importance, and, strange to say, these are almost universally neglected by anatomical students, who, when they have dis-

sected the muscles of a limb, throw away the bones and ligaments as useless.

It will not be sufficient to learn the names of the processes of bones and ligaments which connect one bone with another; the articular shape of their extremities, how they lock into each other, how they are supported by muscles as well as by ligaments in their situation, should be attentively considered; upon a due knowledge of the joints often depends a surgeon's character. Nothing can be more injurious to a practitioner, than to let a dislocation escape his inquiries, which another from his superior knowledge of anatomy has been able to detect. But, Gentlemen, you will have the advantage in this school, of the friendly assistance of Mr. Adams and Dr. M'Dowell, to direct and superintend your anatomical pursuits; and to their care I consign you. Do not waste your time at anatomical lectures by taking notes. Anatomy is more to be learned by the eye than by the understanding. I am not an advocate for notes at any lecture; while the student is marking down part of what has fallen from the Professor, another part, and perhaps the more important, escapes his attention. Besides, he misses the impression which the manner and expression of the lecturer is calculated to convey, when any matter of importance is urged on the pupil's attention. When you return to your study, then note down the physiological or practical information which may be of importance to recollect; and this method of noting lectures is better calculated than any other to preserve the attention awake, and to comprehend the views of the lecturer.

It must be admitted that physiology is but little cultivated in the medical schools of Dublin, yet it is this study which in a great measure rewards the pupil for the drudgery he undergoes in acquiring a knowledge of anatomy, and the arbitrary, and often barbarous nomenclature connected with it. In the view of remedying this defect, as far as our school is connected, we have instituted a distinct lectureship on physiology and comparative anatomy. My former pupil, Dr. M'Donnell, will attempt this arduous undertaking; for arduous I may call it, when we consider the various sciences, the extensive information, and the talent for research which it requires. A consideration of the difficulties attending a course of physiological lectures, claims, therefore, the indulgence of all parties for those omissions or deficiencies which must be expected to attend the first attempt of the kind that has been made in this city.

After the pupil has acquired a knowledge of the structure and functions of the body in a state of health, he is then naturally led to consider the alterations which it undergoes in both, when assailed by disease, and this constitutes the pathological part of the course. Much useful information may be conveyed by lectures on the practice of surgery and medicine; but it is only in hospitals that practical information is to be obtained. As in learning anatomy the pupil must himself use the knife, and see and touch the various parts of the body, in order to learn their relative situations and structure; so, in acquiring a knowledge of diseases, although books and lectures are useful, yet without seeing those diseases, and observing with your own eyes the symptoms and derangements they occasion, (an advantage which hospital practice alone extends to pupils,) you will be ignorant of your profession; and here let me advise you, in the examination of patients, to observe the phenomena of diseases as presented to your senses, and do not trust altogether to the description of authors and lecturers. The expression of countenance and general manner of a patient, even the mode in which he lies in his bed, communicates to the experienced practitioner information which no language, however accurate, could convey; but from which a practitioner is alone often enabled to prognosticate with certainty the termination of the case. This necessary information cannot be acquired by lectures, or from any other book but that of Nature itself.

Most useful knowledge may, no doubt, be imbibed from an intercourse with experienced men; but experience often deceives itself, and errors have been handed down from one age to another, which could only have happened by suffering ourselves to be hood-winked by the authority of the learned, and the dogmata of schools. The book of Nature, however, is uniform; and though difficult sometimes to comprehend, will deeply reward him who studies it with attention, with a mind free from prepossessions, and a sight unclouded by the mists of hypothetical errors.

Gentlemen, be assured we shall all feel a lively interest in the welfare of those who seem ardent in the pursuit of professional knowledge, and we shall be at all times ready to answer, to the best of our abilities, such questions as you shall ask of us, well recollecting the doubts and difficulties which embarrassed our own progress, and the advantage we should have derived from any friendly hand ready to remove some of the thorns and brambles and difficulties of all kinds which obstructed our path.

We would wish to impress upon your minds, that the profession which you are about to commence is one which demands, from the starting post, unremiting labour, to acquire the necessary knowledge which will enable you to enter upon practice with

a conscientious feeling, that you are really qualified for the task.

It may be years, perhaps, before you begin to reap any return for the expense and labour bestowed upon your education. Let these years not be spent in vain regrets that the world is unacquainted with your talents and acquirements, but in adding to your stock of knowledge, not only in professional information, but those various branches of science immediately connected with your profession; chemistry, mineralogy, botany, zoology, and comparative anatomy, may most usefully occupy your time. Our profession naturally leads, more than any other, to a consideration of the wonderful works of nature, which has occasioned the remark of Johnson, that he knew no men in society so generally well informed as those of the medical profession. I say again, make good use of this period of leisure; for when professional business begins to flow in on you, you will find but little time for literary pursuits.

The commencement of practice is always to the young practitioner a state of anxiety, vexation, and disappointment. He begins the world tremblingly alive to the slightest event which may affect his professional character, and trifles, such as disappointment in the powers of a medicine; the peevish and unanswerable questions of patients and their friends, which when he advances in practice would only occasion a smile, give him now many a sleepless night. He observes, perhaps, a fellow pupil, known to have passed in idleness, revelry, and dissipation, those hours which he spent in assiduous labours by day at the dissecting table, the hospital, or the lecture room, and at night beside his solitary lamp, rapidly pass by him in the road to professional emolument and fame; and what is still more galling than even this, he finds the patient, who is perhaps indebted to his skill and assiduous attention for his life, betray an ungrateful want of confidence towards his preserver, and bestow it perhaps on some ignorant pretender, who, through patronage or wordly tact, or the tricks of charlatary, has managed to make the world believe that he is the great Esculapius of the age. Let him not lose his equanimity under all these mortifications; a few years roll on, and the man well grounded in his profession will feel himself stedfast on the pyramid of public estimation, the basis of which is formed by the universal suffrage of the poor, and the apex by that of the aristocracy of the country. The shallowness of the man of patronage is sooner or later discovered, in spite of patronising friends; these even at length slip from his support, and as his professional character has not grown out of the well-earned favour of the multitude, like that of his more deserving competitors, there are no saving hands numerous and strong enough to elevate him above the common mass of mankind, and he sinks to his natural level, never to rise again. Yes, Gentlemen, this is no fiction manufactured for your amusement. The history of professional men, in every realm, and at every period, attests the truth of the story. Let each of you recollect it when about to sacrifice your duties to your pleasures, and I shall not have lectured to you this day in vain.

[During the delivery of this Lecture, Mr. CARMICHAEL was interrupted by loud bursts of applause, and at the conclusion the acclamations lasted several minutes.]

FOREIGN DEPARTMENT.

Controversy between M. SERRES of Paris, and Professor TIEDEMANN of Heidelburg.

OUR readers will recollect that in a late Number of THE LANCET* we published some severe remarks by Professor Tiedemann, on a passage in the 1st Part of M. Serres' work† on the brain. In these remarks, three charges were brought against M. Serres:—1. That he had intentionally altered the title of the 1st Part of P. Tiedemann's work on the anatomy of the brain. 2. That M. Serres had insinuated that Professor Tiedemann had tried for the prize which was awarded to M. Serres' production; and, 3dly, That M. Serres had endeavoured to give an air of originality to his work, which he could only do by claiming merit for discoveries and observations that had been made by others. To these charges M. Serres has just published the following observations:‡

1st. P. Tiedemann charges me with having changed the title of the 1st Part of his

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* Vid. LANCET, Nov. 4, 1826.

† Anatomie comparée du Cerveau, Paris, 1824.

‡ Archives Generales, Nov. 1826.

work. The title which he has given to it is, "*The Anatomy of the Brain, containing the history of its Development in the Fœtus, with a comparative exposition of its structure in Animals.*" The first part is entitled: "*Researches on the Structure of the Brain in the Fœtus at different periods of its formation.*" And the title given in my note, is "*Anatomy and formation of the Brain of the Human Embryo.*" These three titles, of which the two first are used by P. Tiedemann himself, express the same thing; but to appreciate them we must recal to recollection what the first part really contains. It contains the anatomy of the brain of the human embryo, and of its colour from the first to the ninth month of its formation. But what does my version of the title express? The contents of the first part of the work to the very letter. I expressed it in the only terms which were adapted to show that P. Tiedemann had performed respecting the human embryo the same kind of task which I had undertaken on man, the mammalia, birds and reptiles. If I have not employed the word *fœtus*, it is because the French anatomists apply this term to the embryo arrived at one of the later periods. I am almost ashamed to descend into such minutiæ, but as such trivial points are opposed against me, I am obliged to submit them to the notice of the reader.

2d. I have wished to insinuate, it is said, that P. Tiedemann had tried with me to obtain the prize offered by the Academy. It is this which especially appears to have excited the Professor's wrath. But I will observe that this is altogether a gratuitous assertion, devoid of all truth. Nevertheless, I knew that P. Tiedemann had entertained the idea of investigating the subject —I knew that he had sent a work to the Institute even after the prize had been adjudged—still I was silent on these points; for what object had I to gain by wounding, in an uncalled for manner, the feeling of an anatomist whose talents I respect. The work of the same author, entitled, "*Icones cerebri simiarum et quorumdam mammalium rariorum,*" here comes under our notice: "a work," says M. Tiedemann, "which I had resolved, as corresponding member of the Institute since 1812, to send to that learned body, as I had done with other productions." It appears from this, that the author repels the idea of wishing to answer the question; nevertheless, as it was the sending of the work which made me fall into the mistake, it is necessary to put the reader in a situation to judge between P. Tiedemann, who denies having in view the answering of the question, and myself, who supposed that he had that intention. The following letter, which accompanied the work, will dispel all doubts. It is addressed to the perpetual Secretary (Baron Cuvier) of the Academy of Sciences.

Heidelberg, le 22 Juillet 1821.

Monsieur et très-honorable conseiller-d'Etat,

Vous recevrez avec la présente mes *Icones cerebri simiarum et quorumdam mammalium rariorum*, qui viennent de paraitre, et dont je vous ai déjà parlé il y a quelques mois.

Ayez la complaisance de présenter a l'Institut cet exemplaire. Je souhaiterais pourtant au moins pouvoir contribuer en quelque chose à répondre à la question proposée par l'Institut, mes affaires ne m'ayant pas permis de la traiter dans toute son étendue. Je serais bien heureux, si cet hommage montrait à l'Institut combien je prends à cœur de mettre tous mes soins à répondre à ses demandes.

Agréez l'assurance de ma plus parfaite considération et estime avec laquelle j'ai l'honneur d'être, etc.

Signé, TIEDEMANN.

I will abstain from commenting on this letter; it had no doubt escaped the professor's memory when he wrote the recrimination.

The third and last allegation, to which the others are only an introduction, is the question on the originality of my work. For three thousand years, the brain has occupied the attention of anatomists, and what has been the result of their investigation? Suppositions instead of facts, incoherent hypotheses, systems possessing more or less ingenuity, a degree of vagueness on the subject, the inevitable results of want of general principles; a complete blank on the connexions of the different parts of the nervous system. Such was the state of our knowledge in 1818, when the Academy selected the subject for the great prize; and when my work, and the report of Baron Cuvier appeared, the facts therein contained were quite novel. And how would M. Cuvier have made such an extended and favourable report of my work, without ever mentioning that of Tiedemann's, if there was nothing original in it. The simple statement of the facts will be quite sufficient to show the force of the professor's charge.

The first volume of my work consists of ten chapters. The subjects in eight of those have not been touched on by P. Tiedemann. There remains then, two chapters, the matter of which has been investigated by both. These are the third and fourth chapters of the first part of the first volume of my work. In the first of these chapters, I expose the formation of the brain and of the spinal

a conscientious feeling, that you are really qualified for the task.

It may be years, perhaps, before you begin to reap any return for the expense and labour bestowed upon your education. Let these years not be spent in vain regrets that the world is unacquainted with your talents and acquirements, but in adding to your stock of knowledge, not only in professional information, but those various branches of science immediately connected with your profession; chemistry, mineralogy, botany, zoology, and comparative anatomy, may most usefully occupy your time. Our profession naturally leads, more than any other, to a consideration of the wonderful works of nature, which has occasioned the remark of Johnson, that he knew no men in society so generally well informed as those of the medical profession. I say again, make good use of this period of leisure; for when professional business begins to flow in on you, you will find but little time for literary pursuits.

The commencement of practice is always to the young practitioner a state of anxiety, vexation, and disappointment. He begins the world tremblingly alive to the slightest event which may affect his professional character, and trifles, such as disappointment in the powers of a medicine; the peevish and unanswerable questions of patients and their friends, which when he advances in practice would only occasion a smile, give him now many a sleepless night. He observes, perhaps, a fellow pupil, known to have passed in idleness, revelry, and dissipation, those hours which he spent in assiduous labours by day at the dissecting table, the hospital, or the lecture room, and at night beside his solitary lamp, rapidly pass by him in the road to professional emolument and fame; and what is still more galling than even this, he finds the patient, who is perhaps indebted to his skill and assiduous attention for his life, betray an ungrateful want of confidence towards his preserver, and bestow it perhaps on some ignorant pretender, who, through patronage or wordly tact, or the tricks of charlatary, has managed to make the world believe that he is the great Esculapius of the age. Let him not lose his equanimity under all these mortifications; a few years roll on, and the man well grounded in his profession will feel himself stedfast on the pyramid of public estimation, the basis of which is formed by the universal suffrage of the poor, and the apex by that of the aristocracy of the country. The shallowness of the man of patronage is sooner or later discovered, in spite of patronising friends; these even at length slip from his support, and as his professional character has not grown out of the well-earned favour of the multitude, like that of his more deserving competitors, there are no saving hands numerous and strong enough to elevate him above the common mass of mankind, and he sinks to his natural level, never to rise again. Yes, Gentlemen, this is no fiction manufactured for your amusement. The history of professional men, in every realm, and at every period, attests the truth of the story. Let each of you recollect it when about to sacrifice your duties to your pleasures, and I shall not have lectured to you this day in vain.

[During the delivery of this Lecture, Mr. CARMICHAEL was interrupted by loud bursts of applause, and at the conclusion the acclamations lasted several minutes.]

FOREIGN DEPARTMENT.

Controversy between M. SERRES of Paris, and Professor TIEDEMANN of Heidelburg.

OUR readers will recollect that in a late Number of THE LANCET* we published some severe remarks by Professor Tiedemann, on a passage in the 1st Part of M. Serres' work† on the brain. In these remarks, three charges were brought against M. Serres:—1. That he had intentionally altered the title of the 1st Part of P. Tiedemann's work on the anatomy of the brain. 2. That M. Serres had insinuated that Professor Tiedemann had tried for the prize which was awarded to M. Serres' production; and, 3dly, That M. Serres had endeavoured to give an air of originality to his work, which he could only do by claiming merit for discoveries and observations that had been made by others. To these charges M. Serres has just published the following observations:‡

1st. P. Tiedemann charges me with having changed the title of the 1st Part of his

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* Vid. LANCET, Nov. 4, 1826.

† Anatomie comparée du Cerveau, Paris, 1824.

‡ Archives Generales, Nov. 1826.

work. The title which he has given to it is, "*The Anatomy of the Brain, containing the history of its Development in the Fœtus, with a comparative exposition of its structure in Animals.*" The first part is entitled: "*Researches on the Structure of the Brain in the Fœtus at different periods of its formation.*" And the title given in my note, is "*Anatomy and formation of the Brain of the Human Embryo.*" These three titles, of which the two first are used by P. Tiedemann himself, express the same thing; but to appreciate them we must recal to recollection what the first part really contains. It contains the anatomy of the brain of the human embryo, and of its colour from the first to the ninth month of its formation. But what does my version of the title express? The contents of the first part of the work to the very letter. I expressed it in the only terms which were adapted to show that P. Tiedemann had performed respecting the human embryo the same kind of task which I had undertaken on man, the mammalia, birds and reptiles. If I have not employed the word *fœtus*, it is because the French anatomists apply this term to the embryo arrived at one of the later periods. I am almost ashamed to descend into such minutiæ, but as such trivial points are opposed against me, I am obliged to submit them to the notice of the reader.

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marrow in the mammalia and man. P. T. has described them in man only. I then established the relations between these parts in the three upper classes, according to the general principles which I laid down. Did P. Tiedemann know these principles? Had he traced out the formation of these parts in birds and reptiles? If, then, I have arrived at conclusions similar to those of P. Tiedemann, it has been by my own researches, and not by those of others.*

Comparative Diseases of the Tailors, Carpenters, and Bakers in Hamburgh.†

In this free city are two small hospitals supported by the Freemasons. That appropriated to the male sex was intended for labourers; but, in 1805, began to be resorted to by the tailors, and, in 1811, by cabinet makers; but the latter did not use it after September 1824. The total number of tailors treated was 785; of cabinet-makers, 511; and of bakers, only 71; and the deaths were, 84 tailors, or 1 in 9; and 21 cabinet-makers, or 1 in 24; bakers, 4, or 1 in 18. Diseases which are apt to prove fatal to weak persons, were much more fatal to tailors than cabinet-makers; and of those affected with nervous fever, one-third of the tailors, and one-seventh of the cabinet-makers died. Of twelve cases of abdominal inflammation, seven tailors died, while five cabinet-makers recovered. One half of the deaths among the cabinet-makers was from phthisis; one-third of the tailors. The following table exhibits the proportions affected with the principal diseases, compared with the total number of patients exercising each trade:

Diseases.	*Tailors.*	*Cabinet-makers.*	*Bakers.*
Catarrhal fever,	1 in 6	9	6
Rheumatic fever ...	15	14	6
Nervous fever.....	12	24	18
Gastric fever	12	12	18
Intermittent fever ..	10	17	18
Inflammatory fever..	98	64	—
External injuries ..	98	22	35
Ulcers	98	12	14
Ascarides (finger-wurm)	—	46	—

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* The second volume of my work has just appeared; it is but fair to state, that several points are therein discussed, which have also been treated by P. Tiedemann in his work.

† Gerson and Julius Magazin der Auslandischen Literatur, July, August, 1825.

On two New Species of Gravel.

M. Magendie has, in one of his works, pointed out the relation which exists between the quality of the ingesta and the nature of the constituent principles of the urine. He has also shown the connexion existing between the chemical character of the urine, and the nature of the particles of sand which are passed from the urethra. The red gravel, which is invariably formed of uric acid, and is highly painful to the subjects of it, is (like gout) never found but in those who are enormous eaters of animal food. The excess of urea generated in these persons, disposes to the formation of urate of soda in the articulations, that is, to gout as well as gravel. M. Magendie has brought forward some new facts in support of his theory. One in the case of an epicure, who, being charged with a political mission to a country remarkable for the pleasures of the table, after having indulged to excess, thought to remedy any evil that might occur, by eating every morning a large plateful of sorrel. After persevering in this course for twelve months, this political epicure experienced very severe pains in his kidneys and uterers; which were followed by the expulsion of a stone from the urethra, of one half inch in length, and one-sixth of an inch in thickness. The stone was of an orange colour, and very hard. It was found to consist almost entirely of pure oxalate of lime. It is evident that the oxalic acid contained in such quantity in the sorrel, had been the originating cause of the stone.

M. Magendie has made known another species of gravel, the origin of which is not so evident. In the disease which accompanies it, the deposit in the urine is sometimes a powder of a white colour, and very fine, mixed with a large proportion of small hairs, the length of which varies from one-sixth to one-twelfth of an inch. At other times the gravelly particles are whitish, unequal, and of so little consistence, that they break between the fingers without any separation of the small tragments, which are held together by these small hairs, and remain united in a kind of cluster. These hairs can be separated by maceration. M. Magendie has given the name of the *hairy gravel* to this species of the complaint.

The constituent principles of this kind of gravel have been ascertained by M. Peletier to be phosphate of lime, with a small portion of phosphate of magnesia and uric acid. M. Magendie attributes the phosphate of lime to the consumption of animal food in im-

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* Speir's Quarterly Medical Review, No. I. Jan. 1827.

moderate quantity. With regard to the hairs, he confesses his entire ignorance how they can originate. This physician recommends, in such cases, an exclusive vegetable diet, and the employment of alkalies; and in terminating his memoir on this subject, he remarks, "we may perceive what utility may result from a knowledge of the origin and a chemical constitution of calculi, and of how much importance it is for those affected with stone or gravel, who become the subjects of operations, to have the calculi analysed, and to trace back their formation to their origin. *Then only can they hope to be cured of a malady of which the extraction of stone from the bladder is only a dangerous palliative*, which leaves them, as daily experience demonstrates, exposed to all the chances of relapse. This secret of science ought to attract the attention of physiologists and physicians.

The editors of the work from which we have made this extract, agree entirely with M. Magendie in this last sentiment. "We have seen," they remark, "children who have been operated upon even to the third time for stone; besides, it is well ascertained that there exists what is called a calculous diathesis, proper to every kind of calculus, and which renders the operation of lithotomy more or less dangerous, according to the nature of these concretions. In fact, Dr. Marcet has shown that in operations for stone, the ratio of deaths, according to the nature of calculus, is

One patient with mural calculus in 20

One with calculi, in which uric acid predominates, in 7

One with fusible calculi, often mixed with triple phosphate, in 6

One with calculi of pure phosphate of lime, or alternating with triple phosphate, in 4

One with calculi, formed of distinct alternating layers, in..... 3

The calculus of uric acid constitutes a third part of the whole number found in the urinary passages, the fusible and mural calculi together forming the remaining two-thirds. We perceive, by this statement, that the mortality is in the ratio of the nature of the calculus; and such is the difference, that it is more than six times greater for the calculi formed of distinct alternating layers, than for those of oxalate of lime, which leads us to imagine *that in the* production of the former several morbific affections are united. These facts are well worthy of the attention of the profession; there are many who already agree with M. Magendie on this point. We know several for whom we have made analyses of the calculi which had been extracted, who have subsequently submitted their patients to a treatment and regimen calculated to prevent the return of the disease.

M. Segalas, in a note on this subject, laid before the Académie Royale de Médecine, observes that he has found the use of an acidulated liquid, such as of beer, taken in large quantity, produce the discharge of calculi composed of phosphate of lime. From this he is inclined to believe that alkaline remedies are only useful in cases where the calculi are formed of uric acid; where they are composed of phosphate of lime, he would have recourse to acidulated drinks.

There is a case given in the "Revue Medicale" of September, which tends to confirm still more this opinion. It is related by M. Genois, a provincial surgeon in France. The patient was fifty two years of age, and had for several months a degree of vesical tenesmus, with severe pain in the urethra, and at the extremity of the penis. He was sounded, and it was found that there were several stones in the bladder, which were conceived to be of the size of a hazel nut. Two drachms of the supercarbonate of soda were prescribed to be taken daily in a quart of water. On the eighth day of the treatment, the patient experienced very sharp pains, accompanied with retention of urine. The cause of the latter symptom was found to be a small calculus in the urethra, which was pushed back into the bladder with a sound. The use of the soda was continued, by which the painful symptoms were mitigated. At the end a month ten calculi were discharged, with very little pain, by the urethra. The calculi weighed each about four grains, were of the size of small peas, of a spherical shape and smooth surface. They were, on being analysed, found to consist of uric acid, with some animal matter. The patient has since been free from all his former symptoms.

At a recent Meeting of the Court of Examiners, the following ridiculous question was propounded by Sir Fretful Wizard: Young man, what connects the *pericranium* with the *periosteum*? The astonished student stood aghast, stammered, stuttered, and reeled backwards; but the bilious Knight, anxious to relieve the "young man" from his embarassed situation, amused the Court by ejaculating, Why, *cellular substance*, to be sure!!!

THE LANCET.

London, Saturday, January 20, 1827.

When the Legislature of a country deviate either accidentally or designedly, from correct principles of legislation, it is no less their duty to purify themselves from the error into which they have fallen, than it is the duty of the people, whilst they constitutionally submit to the operations of the law, to demand from their Representatives its amelioration or repeal. That the influence of private interest has often obtained for a country laws of the greatest excellence and public importance, we will not attempt to disprove; but that the converse has been much more frequent, none will have the temerity to deny. It is asserted, by many cateless observers of human actions, that the presence of such a host of professional lawyers as now sit in the House of Commons, is a sufficient guarantee that no laws contemplated for sordid purposes ever receive the sanction of that House; that the professional cunning of the lawyers would at once detect the chicanery of the knavish suitors, and that exposure and defeat would invariably ensue. Unfortunately, the occurrences of every succeeding Session of Parliament display, in the most glaring colours, the fallacy of such statements. It is not our object to question the skill of the professional senator; but when we contrast the conduct of these lawyers, as it is presented to us in our judicial courts on the one hand, and in the House of Commons on the other, the picture presents little to admire in the legal senator, whilst it exhibits most glaringly the industry, cunning, and avarice of the *hired* advocate.—When these Parliamentary gentlemen solicit the voices, "modest, sweet voices," of their constituents, they do not omit to advance all sorts of protestations of what will be their conduct for the benefit of their country; and that, whilst they will be careful to direct their particular attention to the electors of the borough of * * * * *, yet that they shall, at the same time, hold their seat as a *retaining fee* for the protection of the people at large. It appears, however, from the diversity of effects produced by the *seat-fee* of the House and the *gold-fee* of our common law courts, that these lawyers hold the two in very different estimation; the *gold-fee* excites all their energies, calls forth all their talents, sharpens their functions, fertilises their wit, and under its omnipotent influence truth is often proved a liar! Such are the wonderful effects produced by the *gold-fee*; but, unhappily, the retaining fee of the people, or in other words the *seat-fee*, is not possessed of such stimulating properties—at least not mentally considered—as the sign of its influence is too frequently confined to the seat, and finally terminates in a *caudal* extremity, the emblem of *nothing*, at once the sign of the possessor's apostacy, and the people's folly.

Does it not strike every reflecting mind as most extraordinary, that hundreds upon hundreds of public and private bills, framed so unintelligibly that no ordinary understanding can embrace their meaning, and the most prominent feature of which is the selfishness of their promoters, should annually receive, without observation or comment, the sanction of an assembly composed in great part of some of the most acute lawyers of the age; yet these same lawyers, when they are under the influence of the *gold-fee*, can, during hours together, detect and expose their absurdities; can unsparingly exhibit their defects; can denounce them as unjust and unwise; can boldly assert they are a disgrace to the nation, and were obtained for the most sordid of purposes? Do not these things appear to the reader inexplicable? It certainly does not redound much to the honour of *British ad*-

cates, as they are often stupidly termed, that they can hear, night after night, bills read that are characterised by nothing but folly, baseness and meanness; and that are sure to prove instruments of oppression and degradation to their countrymen;—it does not, we say, redound to the honour of *British advocates* to be the quiescent spectators of such narrow-minded policy and bare-faced villany.

A further consideration of the report of the trial of *Steed* v. *Henley*, published in our last Number, has extorted these comments. Whether we look in that report at the obliquity of the Judge, appointed by his King to dispense justice; at the quibbling of the counsel whilst under the influence of the *gold-fee*; at the execrable effects of the Apothecaries Act, or at the conduct of the Legislature in passing that Act, we feel ourselves overwhelmed with shame and indignation. That the Chief Justice praised the Act is not surprising, when in all probability he was a member of the House at the time it passed; but we crave his Lordship's attention one moment, and ask whether he considers it possible that the House of Commons could have contemplated DISPOSSESSING the *Members of the College of of Surgeons* of their right to recover for medicines, *whilst that right* was CONCEDED *to the ignorant chemist and druggist*—impossible! and we contend, fearlessly contend, that the plaintiff in this action was *illegally nonsuited*. He lost his cause it seems (to quote the words of the Chief Justice,) from there being "no evidence to prove that he was in practice as an apothecary before the 1st of August, 1815."

Now to recover this debt it was not necessary that such evidence should be adduced, inasmuch as the plaintiff did not sue the defendant in the character of an apothecary, nor was the debt incurred from any thing that he had done as an apothecary. If his Lordship will turn to the Act in question, he will discover that the *practice* of an Apothecary consists in compounding and preparing medicines *prescribed* by a PHYSICIAN *legally authorised* to practise physic, the prescriptions bearing the *initials* of such physician; now the plaintiff had not dispensed the prescriptions of any physician, authorised or unauthorised, but merely forwarded to his patient medicines that he had *himself prescribed*, and at the same time attended the patient as a Member of the College of Surgeons; and we beg his Lordship to recollect, that Mr. STEED obtained his Diploma from the College on the 6th of August, 1813, whereas the Apothecaries Act did not pass the Legislature until TWO YEARS *subsequently*.

Now we defy his Lordship, or any other person, to point out a single sentence in the Apothecaries Act which tends to prove that *visiting* a patient is acting as an Apothecary; that *prescribing* for a patient is acting as an Apothecary; or that dispensing a prescription even, is acting as an Apothecary, unless that prescription bear the initials of a legally authorised physician. The Apothecaries Act contains *no such clause*; and every conviction, *without exception*, that has occurred under the operation of that Act, has been *illegal*. How then could his Lordship, consistently with his duty, nonsuit this plaintiff. To visit and prescribe for patients is, indeed, an offence under the Charter of the College of Physicians; but the decision of the House of Lords in the case of *Hose* v. *Searle* in 1691, has rendered it a nominal offence only, as the College has no longer the power to inflict penalties. As a Member of the College, Mr. STEED was *justified* in visiting and prescribing for his patient, surely without being in any apprehension of the legal weapons of the old Hags of Rhubarb Hall. The chemist and druggist, with equal security, can prepare medicines prescribed by himself; wherefore, if the law of the learned Judge be correct, it follows, that a Member of the College may possess wit enough to *prescribe*,

but that he has not wit enough to *dispense his own prescriptions*; that although some judgment might be requisite to determine whether one grain or one ounce of arsenic should be administered, yet that he who could thus decide would not be competent to hold the balance and adjust the *weight*, and that this great intellectual (not manual) achievement could only be accomplished by *chemists and druggists*, whose great talents secure them harmless from the penalties of the Apothecaries Act, whilst Members of the College of Surgeons, who have wit enough to *prescribe*, but not to *weigh*, are the only victims of its monstrous policy, and oppressive degradation. His Lordship stated, at one part of the trial, that the Act "was the best security the public had against *ignorant* persons practising as Apothecaries." This, probably, is his Lordship's opinion, but it certainly is not ours; that it was the *intention* of the legislature to render it a protection, we would fain believe, although this acknowledgment of their rectitude amounts to a denial of their judgment. And are the Members of the College come to this! The Act was *intended* to guard the public against *ignorant* Apothecaries. Mr. STEED is a *Member of the College* of Surgeons, and, THEREFORE, he is *too ignorant* to practise as an Apothecary, and the law will not allow *such a man* to recover! Most worthy and irresponsible Council of Lincoln's Inn, do ye not experience some compunctious visitings of your Chartered conscience? Do you not feel some shame, some pity, for the fallen condition of your Members? On this occasion, however, we will supply an antidote to your grief in a contradiction of the learned Judge, who remarked, at the termination of the trial, "That the plaintiff's was a hard case, as he appeared to be a person of *skill*, having been regularly admitted to the Royal College of Surgeons." If the plaintiff were a person of *skill*, how then could the Act apply to HIM, as his Lordship before tells us that it was to protect the public against *ignorant* persons; moreover, the plaintiff, having become a Member of the College in August 1813, according to the Chief Justice he was *a man of* SKILL *two years* before the Apothecaries Act was in existence, yet that Act, passed in 1815 to protect the public from *ignorant* persons, is the means of nonsuiting a plaintiff, who had been, during *two years*, *a person of* SKILL. This is legislating for the benefit of the public, with a vengeance, and the Members of the College of Surgeons may congratulate themselves that the Act of 1815 was not an instrument to "transport them beyond the seas for the term of their natural lives." Had it been such, we dare swear it would have experienced no opposition from the College in Lincoln's Inn Fields.

The absurdities that we have here thought it our duty to expose, furnish further testimony of the anomalous condition of the laws relating to the practice of medicine. It affords us, however, the highest satisfaction to observe, that the subject of Medical Legislation is not only engaging the attention of the first talents in the profession, but that the repeated discussions it has recently experienced in this country have extended their influence to all the principal seats of medical learning. Advocates of the most splendid attainments are appearing in every direction, and Mr. CARMICHAEL, the PRESIDENT *of the Dublin College of Surgeons*, is not among the least. To his admirable Introductory Lecture, delivered during the past week at the Richmond Hospital, we beg to direct the particular attention of the reader. It commences at page 501 of our present Number. In reference to the arbitrary, barbarous, and injudicious division of medicine into *pure* surgery and *pure* physic, there will be discovered in it a remarkable coincidence of sentiment with the excellent Introductory Lecture of Mr. LAWRENCE, delivered at the New School in Aldersgate-street. When we consider that

Mr. CARMICHAEL is the PRESIDENT of the Dublin College of Surgeons, no man will hesitate to acknowledge that his opinions and sentiments are calculated to render him an object of admiration and affectionate regard to his own countrymen, and to establish him as a liberal and enlightened Surgeon throughout the world.

The excellent comments of Mr. CARMICHAEL on the division of Medicine and Surgery, bring to our recollection a statement which has appeared in the newspapers during the past week, respecting the *Medical* and *Surgical* treatment of the late DUKE of YORK, and it is reported that H. R. Highness' *Physicians* are its authors, which we should be most reluctant to believe; however, if the report be well founded, we can regard the production in question in no other light than as a *gauntlet* thrown down by the President and Fellows of the London College of Physicians to the entire body of English Surgeons—most wantonly and most daringly thrown down to them—and if it be not speedily contradicted, we shall continue to regard it in this light, and treat it accordingly. Although THE LANCET is the only Journal in the British dominions edited by a SURGEON, yet we have nothing to fear from a war with *Physicians* wantonly provoked;—we are armed for the *conflict*.

Stereoples, or the Artificial Defence of the Horse's Hoof considered. By BRACY CLARK, F.L.S. Corresponding Member of the Academy of Sciences of Paris, and of the Natural History Society of Berlin. 4to. pp. 38. London, 1817.

HAVING, in our last Number, endeavoured to give our readers some general idea of Mr. Clark's discoveries, we shall now proceed to the *general* construction, without entering into any minute anatomical description, of the horse's hoof, preparatory to a particular notice, accompanied by plates, of the improved method of shoeing.

And, first, *of the Heels*. The posterior part of the horse's foot is deeply cleft in the middle, so as to represent two terminations, which are called, without distinction, the *heels*, although the extremities of the cartilages, and their coverings, form one part; the extremities of the hoof, and the bands of elastic matter at the back of the frog, another, or middle part; and the extremity of the under surface of the hoof, where the heels of the shoe are applied, and corns arise, another and very distinct part, yet they are all included in the same general phrase. To obviate this ambiguity, Mr. Clark calls the parts covered by the shoe, the *lower* or *horny heels*; those formed at the back of the frog, the *inferior heels*; and those formed by the cartilages, the *superior*, or heels above the hoof.* He objects to a division of these parts into *horny* and *fleshy heels*; since, under the horny heel is found the fleshy heel, as under the horny, the fleshy sole. The term fleshy, too, supposes something of a muscular structure, which these parts do not possess.

"From their elastic properties," says the author, "the heels enable the back part of the foot to extend itself, on receiving the pressure and weight of the animal; yielding with a suitable degree of resistance, on this occasion, outwardly in every direction. It is somewhat singular, and worthy of remark, that those parts which form so considerable a share of the foot of the full grown horse, have scarcely an existence in the young foal; their rudiments, or germs only, are seen in this period of their life; for the hoof is then lapt about the coffin bone in a form nearly cylindrical, and is actually larger above at the coronet, than at the base, or bottom of the foot. And it is remarkable, that the front of the foot almost singly seems to perform all the offices required of the foot in this stage of his existence; with his limbs held almost straight and erect, and fetlocks very little bent, he in this manner accompanies his dam, his toes at every step dig-

* A series of original experiments on the foot of the living horse, exhibiting the changes produced by shoeing, and the causes of the apparent mystery of this art. By Bracy Clark, 4to. 1809. Sherwood and Co.

ging, as it were, into the ground. As his size and weight increase, these parts, together with the frog, are brought more to the ground; and these germs, or rudiments of the foot of the foal are, by the pressure and the growth, slowly unfolded; *not, however, obtaining their full and completed form till about the fifth year, along with the other members and parts of the body. Nor do they ever obtain their entire growth if restraint of any sort has been used during this period.* Op. cit. p. 15.

The natural development of these parts is not absolutely essential to the "*existence*" of the foot, since without them the horse may still move, though indifferently, and with pain. They appear to afford an elastic sort of bed for the weight of the horse to repose on, and thus to prevent soreness and fatigue from too much resistance. The pads of several tribes of animals allied to the horse, appear to answer the same purpose.

"In progression, the weight of the horse is first thrown perpendicularly upon the fetlock joint, and from thence in an oblique direction it passes to the foot, taking a primary bearing on the coffin bone, which distributes it over the inside of the hoof, richly provided with a truly extraordinary apparatus of elastic processes for increasing its internal surface, and preventing the dislodgment of the bone, admitting, at the same time, of a certain degree of motion of this bone in the hoof, in a direction downwards and backwards, from the obliquely sloping front towards the heels. Next, in a secondary manner, the weight is received on a smaller bone, placed in contact with, but moveable upon, the coffin bone, viz. the shuttle bone, which, lying behind the former, across the more elastic parts of the foot, by its depression a share of the weight is communicated to the heels and quarters, producing their immediate expansion, as may be seen on pressing upon this bone in the dead subject, especially if it be met at the same time by pressure on the frog. This experiment should be made on the perfectly natural foot, that has not been made stiff and inelastic by the use of the shoe. It appears, therefore, as though the posterior elastic parts of the horse's foot are in reality designed to receive, adjust, and balance the weight by their spring in meeting it, whilst the front of the hoof, by its solid resistance against the ground, impels the mass when progression is required.

The back parts of the foot, naturally so elastic, being fixed by the application of the shoe, are rendered partially or entirely inactive, and diminishing more or less rapidly, become at length perfectly rigid and inflexible; though called the heel, these parts are only the bifurcations of the frog.

The wall of the hoof is deepest or highest anteriorly, and diminishes as it approaches the quarters, where it almost loses the conical shape, becomes nearly upright, and makes a sudden turn, or inflection, inwards, "pursuing its course towards the centre of the foot, diminishing still in depth till it is finally lost in mixing with the sole near the point of the frog, thus forming a distinct and remarkable internal wall for these underparts of the foot in the very interior of the sole, and protecting at the same time, by its bold projection, the sole and the frog from an undue degree of pressure and contusion against the ground." Before the author's discoveries, this singular continuation of the wall, which is termed the *bars of the foot*, had been described as part of the sole.

"A triangular space is thus wonderfully provided between the inflected extremities of the wall of the hoof for the insertion of the frog, forming, at the same time, a coved covering for its protection. This part appears to form the basis, or first principle, in the mechanism of the hoof, the other parts being all subordinate to this, and if so understood, it will disclose a more easy view of the nature and economy of its structure. The inside of the wall is every where lined with elastic processes, proceeding downwards perpendicularly from the coronet, and in a line parallel to the line described by the front of the hoof; these appear to be about 500 in number, and afford a multiplied and very extensive surface of attachment to the same number of processes growing from the coffin bone, or more truly from the vascular reticulated web covering its surface."

The wall, when decomposed, appears to be formed of longitudinal hollow threads, or hairs strongly matted and glued together, and receives but little accession of horn after leaving the coronet, except on meeting the sole, where, by a turn or inflection, it gives the heel a peculiar solidity and

strength, thus defending the tenderer portion of the sole included in its curvature. This arrangement may be seen by making a section of the recent foot, about midway between the coronary circle and the base of the hoof.

Of the Frog.—"This triangle of elastic horn has the effect of, and may be compared to, an elastic key-stone received into an elastic arch, communicating in some cases and admitting in all, the springing movements of such kind of arch. Its base, from its width and quantity of matter, possesses the full capacity of its motion along with the heels, which is gradually lost in approaching the centre of the foot, where there is less occasion for movement." Its base connects the two processes of the hoof, passes over and envelops those parts and restrains their action; it takes a third rate, or degree of bearing upon the ground, the wall first, and the bar next, projecting beyond it; its base also further retires from pressure, and is protected by the projecting angle of the horny heel.

The commissures on either side of the frog afford room for its expansion. The ends of these commissures at the horny heels are arched over by a process or extension of the horn of the base of the frog. To distinguish this part from the other parts of the foot, the author calls it the "*arch of the commissure*," which the smiths cut away "when they get embarrassed by the falling in of the hoof, and then tell you they are 'THROWING open the heels!'" The other extremity of the commissure growing shallower, is lost in the level of the sole ere it reaches the apex of the frog. Seen from without, the frog appears to be a solid body, but it is only an inverted arch of horn of inconsiderable thickness. The base of the frog occupies about a sixth part of the area of the natural foot, and hence the changes produced by shoeing, or other injuries, may be readily detected. We now come to another discovery of the author:—

"- - - - that the frog is connected, in a very unexpected manner, with the front of the foot; the wings, or lateral processes of the base of the frog not only enclose, as already stated, the ends or doublings of the hoofs, *but the same horn is continued round* the whole line of the commencement of this part of the hoof, immediately beneath the coronary ring, forming a convex band, whose upper edge, or margin, projecting higher than the hoof itself, receives and covers over the terminating edge of the skin where this part meets the hoof, and thus protects it from injury or dislocation by external violence of any kind; it also seems to serve the useful purpose of keeping those parts moist and pliant, preventing irritation; for when wetted it appears readily to absorb moisture, and continues of a darker colour in consequence, whilst all the other parts of the hoof are suddenly dried; it has the power it would seem, when no external wet is artificially applied, of collecting the perspiration of the skin, thus maintaining the proper tenacity and pliancy of these parts. Every one used to examining the hoof of the horse must have observed, when the foot is drawn out of it, a projecting eminence of soft horn, with a channel inside it, being the upper edge of this band; this appearance we had long ago noticed, without till lately (1609) observing from whence it had its origin; besides the uses already ascribed, of connecting together the upper circle of the hoof, supporting and adapting it to the sensitive circle, it strongly binds the frog in its situation, by connecting it with the front of the hoof and to the upper part of the slope of the horny heels."

The author calls this part the *coronary frog band*. It is small at first, but gradually completes its bulk and form with the progress of the frog, with which also it diminishes and suffers. The *cleft of the frog* seems to serve the purpose of uniting more firmly the two halves of which the foot at this part consists; there being a tendency to separation in the horse's foot, as in the cloven-footed animals. It is merely the hollowed base of a cone of horn which passes into the sensitive frog, and which is nearly as hard and tough as the horn of the exterior frog exposed to the air. The part appears to be the seat of the "*running thrush*."

"This remarkable cone of horn is flattened on its sides, that it may have a wider surface of connexion with the two halves between which it is situated; and its strength, in a longitudinal direction, com-

bining the two heels, is not thereby at all diminished.

"This important part has not hitherto been much noticed, or received, that we are acquainted with, any distinctive appellation; we have therefore ventured to call it the *frog-stay* or *bolt*. Like an inserted tooth, it more firmly holds the horny to the sensitive frog; for whilst the sensitive frog falls into the inverted arch of the horny frog, and is thus held most firmly in its place, this part entering in the opposite direction into the sensitive frog, serves reciprocally to confirm and fix these parts together, and preserve them from external injury and dislocation."

The frog stay essentially co-operates with the coronary frog band above described, in keeping the whole structure together; and is stronger in proportion, as the author thinks, in horses of the blood than in coarser breeds. Another useful part which the author calls the *cushion of the frog*, is a rotundity or swell of horn between this cleft and point of the frog nearly under the *shuttle bone*. It appears to defend the tendon passing under that bone from injury,—to support it by "pressing against it at the moment of its greatest extension, which takes place while the foot is on the ground impelling the weight of the body," and to prevent it being torn from its attachment, or breaking at the sudden turn given to it in passing beneath the coffin bone. It serves, also, to defend the joint formed by the two foot bones, and the most important soft parts of the foot. The growth of the frog, which is naturally slow, appears to be entirely arrested by the process of shoeing, although it is the current opinion of smiths, that if left to itself, it "will run all over the foot;" they therefore pare it, to keep it within due bounds. "But the frog," the author observes, "has the perfect power in itself of maintaining its own figure, beyond which it will not pass." After attaining the prescribed extent and thickness of horn, scurfs form and fall away, thus it ever preserves the same figure.

The author next makes some sensible observations on "the probable degree of pressure which Nature has designed the frog to receive," into which our limits will not permit us to follow him. Artificial pressure on this part can neither expand the heels, while confined by the iron shoe, nor, we apprehend, be of any other service. We believe Mr. Coleman has long since abandoned this visionary scheme. The pressure of the nails of the shoe, as the author well observes, is perpetual; and if it be meant to obviate contraction, so should be that of the frog. The French call the frog *la fourchette*, or the fork; the Latins *furca*; and the Greeks χελιδων, or the swallow; with the latter, however, it ever occurs in the plural, (χελιδονα.) The term *running thrush* crept in from the French *fourche*. First *running fourche*, then running *frush*, till at last the jockeys not finding this word in their vocabulary, decided that *thrush* was the proper term, and *thrush* it has accordingly been for ages.

The *sole* is an irregular plate of horn serving to close up the space described by the lower circumference of the wall, and makes the third member a part of the hoof. "It is usually of an arched form, more or less flattened; its concavity to the ground, its centre more in action and thinner, is by this means removed from the degree of external pressure, which the sides or bottom part of the arch have."

"Nature has secured herself most remarkably, in two ways, from the resistance which an arch of common properties would create, in becoming more condensed under pressure, and forcibly resisting the load brought upon it, which would have been subversive of the leading principles in the mechanism of the foot; the sole is, therefore, cleft to its centre even, or beyond it, by a large triangular opening formed at its posterior part, which destroying the resistance of the arch, serves to receive the ends of the wall of the hoof first, and is then closed and filled up by the insertion of the inverted arch of the frog; so that the ends of the hoof are thus tied in, and secured from being forced asunder by the pressure from within, being thus wedged in between the frog and the sole, and are made to serve in these places the other offices we have already noticed, while the sole being thus broken, has a diminished resistance at its centre."

The lower circumference of this arch of the sole every where abuts against the sides of the wall, which are sufficiently flexible outwards, to yield to the weight when pressed against by the descent and flattening of the sole; so that the sole is thus doubly secured from that resistance which would be injurious to the functions of the foot. The common unyielding shoe fixes the wall, and resists its action; the weight falls on the sole, which can only be relieved by pressing on the fissure enclosing the frog, and this collapsing, the bars of the frog will be made to approximate. Sometimes; if the shoe be small, the sole is forcibly thrown upwards against the coffin bone, producing great uneasiness and lameness, which are usually attributed to standing in dry or heated stables. Adverting to the terms *solidungula*, *solidipes*, &c., Mr. Clark, with good reason, objects to them; for, as he says, "though the front of the hoof be solid, the posterior parts possess the greatest degree of elasticity, short of being actually cloven, that can be imagined, from the sole being opened to its centre, and filled up by a frog." The term *semifissipes*, or half cloven foot, is proposed in their stead

Of the Horny Heels.—"The inner heel is sharper in its horn, and not so wide as the outer heel, and both slope inwards, in the full grown natural foot, with a rapid declivity, avoiding by this oblique structure any flat and direct pressure from the surface of the ground. By shoeing, these heels become very much reduced and flattened, so as that a flat-heeled shoe, or one whose upper surface is level, shall almost equally touch the bar with the side of the foot, unless previously a small portion of the bar be removed, as is usually done, though in the natural foot the bar lies so considerably below or within the level of the outside of the horny heel, as to make this unnecessary.

"To prevent any pressure on these tender parts of the foot, the smiths usually bevel or slope the shoe inwards, which has been much inveighed against by various writers on these subjects, and considered as the principal cause of contracted feet, though those who thus complained and reasoned without the practice, did not know that horses, if shod differently, will not go so well; for seated shoes, level in this part, do not, as practice and experience teach us, so well suit the foot as those made with a slight inclination, or bevel, in every part of them, which preserves the horn also from cracking up in other parts of the foot better than a flat-seated shoe; and as to the contraction of the heels, it arises from other causes, that unless carried to a very great excess this bevelling will not appear to make so much difference as might be imagined, and this on account of the firmness with which the foot is held up on the surface of the shoe by the nails, aided also by the inequalities of its surface, to which the horn adapts itself; for the heels, it is obvious, cannot have any great deal of action but in concert with the quarters, especially after they have become stiff with shoeing."

Of the bearings of the Hoof on the ground.—"The surface of bearing of the natural hoof is not round the whole line of the inferior circumference of the wall of the hoof, for the horn of the inside of the toe and the outside heel take a greater share of wearing than the other parts, and, as it were, in the diagonal or crossways direction of the foot. The inside heel is also on a lower level than the outside heel, and giving therefore to the foot an inclination, or bearing, to the outside. By this obliquity of the heels, the pressure is thrown outwards against the stronger parts of the foot, tending to separate the feet; for if the inclination had been inwards, the approach of the feet would have been the consequence, and would narrow the base with certain inconvenience."

"*The wear of the hoof* does not take place in front of the foot at the extremity of the toe, as might be expected, but almost ever in an oblique direction on the outside of the front, so that the wearing away of the hoof does not proceed so rapidly as it would have done in a straight line across the point of the toe, from the foot being narrower there; and economy in this respect is of no small value to the animal in a state of nature, or if used without shoes, as is still the case in some countries. In this way also the wear is turned towards the outside of the hoof, which is its strongest and hardest part. The wear of the hoof is directed obliquely to the outside of the toe, not by any mechanism existing in the foot itself, but by the bones of the knee having their surfaces for motion directed outwards, so that when the foot is off the ground, if put in motion, it is obliged to follow this direction; cutting or interfering with the opposite leg is also materially prevented by this construction of the limb."

We have now gone over the general construction of *the hoof*, and so far accomplished our design. In our next we shall endeavour to get through the *Stereoples*.

LONDON MEDICAL SOCIETY.

Dr. CLUTTERBUCK, President, in the Chair.

AFTER the minutes of the preceding Meeting had been read, Mr. WIGAN corrected some inaccuracies which had been made in the minutes, respecting a few remarks he had been induced to offer on the advantages of Assalini's forceps, and this reclamation led to some further discussion on the subject, in which Dr. WILLIAMS, Mr. FIELD, and Mr. PROCTOR took the principal parts.

Mr. SERY, having made a few observations on the interesting nature of Physiological Inquiries, said, That if in the course of the observations he should have to offer on the theory built up by Dr. Barry, he might express opinions hostile to the conclusions which Dr. Barry had drawn, he relied for their support on the same arguments on which Dr. Barry had rested his, namely, on observation and direct experiment; and if he might be led to question the *originality* as well as the *accuracy* of Dr. Barry's deductions, he begged leave to say that in doing so, he attributed no improper motive to Dr. Barry, for whom no man entertained greater respect than himself.

As the validity of Dr. Barry's opinions respecting absorption rested entirely on the accuracy of his views respecting the circulation, he should at present confine himself to a consideration of the latter function, and endeavour to establish the following propositions:—

1st. That the doctrine of a thoracic vacuum influencing the return of the venous blood, be that influence what it might, did not originate with Dr. Barry.

2dly. That the influence of that vacuum (or, in other words, of the atmospheric pressure acting on it) on the venous circulation, must be very inconsiderable, as the blood could be returned to the heart without its assistance.

Without noticing chronologically the various opinions respecting the powers concerned in the circulation from Harvey downwards, or enumerating the different kinds of the *vis a tergo*, and the *vis a latere*, he might mention that in 1774, Dr. Wilson, formerly a physician at Newcastle-upon-Tyne, published a very curious and ingenious pamphlet on the causes of the motion of the blood, especially in the veins. He supposed that the heart possessed the property of dilating inherent in itself, and that in consequence of that dilatation, a cavity or vacuum was formed, by which the blood was pumped from the veins into the heart. Without entering into the arguments at that time urged to prove that the natural or quiescent state of the heart was that of contraction, although it had since been shown that it was that of relaxation, like all other muscles; he might mention, that Mr. John Hunter was of opinion that the blood was assisted in its passage to the auricles by a kind of vacuum being produced by the contraction of the ventricles. Blumenbach, in his third edition of the "Institutions of Physiology," had expressed his opinion, whether correctly or otherwise did not affect the present purpose, that this vacuum greatly contributed to support the circulation. The nature of this vacuum, and the manner in which it is produced, was yet more clearly pointed out by *Dr. Carson* of Liverpool, in 1815, in his "Inquiry into the causes of the Motion of the Blood," which was a sort of improved edition of his inaugural dissertation, published at Edinburgh in 1799. Without subscribing to all that Dr. Carson had said, he thought it would be confessed that the account he had given of the mechanism of respiration, and of its influence on the circulation, was the best yet produced. In that work were brought forth some very good reasons in support of a theory, which was briefly this: that as there is no substance between the external surface of the lungs, and the walls of the thoracic cavity, they may be said to be suspended in vacuo; that they are kept adapted to the varying dimensions of the chest, by the weight of the atmosphere pressing upon their internal surface; that by the strength of the collapsing effort of the lung, the parietes of the chest are pressed towards the spaces from which the lungs have a tendency to retire, with a force commensurate with the share of atmospheric weight, which the elastic power of the lungs is capable of supporting. That as the pericardium forms a part of the boundary of the cavity of the chest, that as it surrounds the heart, and is every where in contact with it, it will have to resist a certain amount of atmospheric pressure laid upon its internal or concave surface, in consequence of the connexion between the heart and the external surfaces of the body. That before it can be brought to support any part of the balance of unequal pressure, it must be dilated by its contents, (the heart and large vessels,) to its utmost extent, and then its firm inelastic structure preventing it from yielding further, the pressure must be resisted by the walls of the heart. That as a full dilatation of the greater part of the chambers of the heart would be required to distend that organ to the extent spoken of, the successive dilatation of the different chambers of the heart, after their contraction, is fully secured

by an adequate power, namely, by atmospheric pressure acting on the surface of the body, driving the blood in the veins into the chambers of the heart. "So that," said Dr. C., "the evident and incontrovertible consequence of the *abstraction* of a certain portion of the general weight of the *atmosphere* from the convex surface of the pericardium, by the resiliancy of the lungs, and of course from the convex surface of the auricles, either directly, or intermediately by the contraction of the ventricles is, that the blood at the time in the large venous trunks in contact with the heart, must be less resisted on the side of the heart than at any other point; and that in obedience to the laws by which fluids are governed, it must flow towards the centre of pressure, into the auricles." In summing up his opinions he had expressed himself thus: "In short, the *motion of the blood* in the *veins* is produced by the *force* of the *heart and arteries* urging it behind; by the *abstraction* of a *share of the atmospheric pressure* from it in front; and by gravity."

Dr. Elliotson, in a commentary which he makes on Dr. Carson's theory, in a note appended to Blumenbach's physiology, says: "For the *venous blood being subject to the full atmospheric pressure* without the chest, will necessarily be *driven into the chest to prevent a vacuum*. So that what effect the heart loses by atmospheric pressure *without*, the chest is exactly compensated *within*; and thus, on the whole, the *heart neither gains nor loses* by all the various directions of atmospheric pressure." This conclusion came probably very near to the truth.

Although the influence of the atmospheric pressure on the return of the venous blood, in consequence of the thoracic vacuum, had been thus distinctly mentioned, and a power ascribed to it equal to the resistance of the atmosphere on the current of blood in the arteries, Dr. Barry had not once named any of these authorities in his "Recherches Experimentales," which he published in Paris, and only indistinctly alluded to Dr. Carson's theory in his reprint of that work in London, dismissing it with the remark, that it "made but little impression," because he did "not find it alluded to in the lectures or the writings of the French physiologists." Whereas, nothing was more notorious than the former ignorance of the French of foreign writers, and it was only within a few years that they had begun to escape from that accusation with which they were so long and so justly charged. If Dr. Barry, after his return to this country, had only carefully looked into the work of Dr. Carson, he would have found that it contained the essence of that theory which he had now introduced as his own; and the very terms which he had used, employed in its description; at any rate, if he had done so, it is to be presumed that he would not have written such a paragraph as was to be found in the 9th page of his preface, which ran thus: "*A vague unauthenticated* notion that the return of the black blood to the heart is in some *undefined* way influenced by *suction*, may be traced back as far as the time of Harvey. But the mechanism was never pointed out by which nature applies the *mighty agency of atmospheric pressure* to the veins, and connects as cause and effect the expansion of the chest with the afflux of the centripetal fluids to the heart."

Magendie, in the second edition of his Physiology, published in 1825, had related with great perspicuity several experiments which *he* made, fully establishing the concordance of the increased movement in the venous trunks with inspiration, but he regarded inspiration as it deserves, only as an inferior *accessory* power. "The mechanism of this aspiration, (said he,) is similar to that which draws the air into the lungs; it is, so to speak, an *inspiration* of venous blood." Yet, in Dr. Barry's "Experimental Researches," published in London towards the close of 1826, Magendie's name, in connexion with these experiments, is not mentioned, except in the report of the Institute, where the name of a Dr. Zugenbuhler is also spoken of, who wrote a thesis *de motu sanguinis per venas*, in 1815, containing just the same opinions as it would appear are to be found in Dr. Carson's work. How far the theory of Dr. Barry, which ascribed the afflux of the centripetal fluids to the heart to the *mighty agency of atmospheric pressure*, was entitled to the meed of *novelty*, must be left to others to determine.

Mr. SPRY said that he should endeavour to establish his second proposition, by a reference to some familiar facts, and to experiments made by himself and others.

He supposed that few persons were now unacquainted with Dr. Barry's opinions respecting the circulation, but it would do no harm to repeat them in a brief manner. Dr. Barry wished it to be believed that, in consequence of the *vacuum* formed somewhere in the thoracic cavities during *inspiration*, the *blood returns* to the heart *only* during the expansion of the thorax, and that enough blood is driven into the chest during *one inspiration*, to *supply* the left *ventricle* with the necessary quantity of blood for the entire *respiration*. That as a matter of necessity there must be a *reservoir* into which the venous blood must flow, and that that *reservoir* is formed in the *cardiac extremities of the great veins*. That these veins are in a state of *progressive distention* from the beginning to the end of inspiration; and that, therefore,

as a matter of course, there is no *alternation* of contraction between the parts of the auricles within the pericardium, called sinus venosus, and the ventricles corresponding to the pulse. This was the outline of the theory.

Any man in health could measure the number of pulsations in the radial artery during an entire respiration, and he would find that there were five, and of course five to *one* inspiration. It had been satisfactorily shown, at any rate it was generally admitted, that two ounces of blood pass from the left ventricle into the aorta at each contraction, and as there were five such contractions in each respiration, *ten* ounces of venous blood must be sucked up or forced up into the thoracic reservoir, at each inspiration; this might be possible, but let any man make a deep inspiration and a complete expiration, and then suspend his respiration during thirty beats of the radial pulse, which might be easily done, and what were we to infer from the fact? But one of two things; either that a quantity of blood equal to *sixty* ounces must be thrown at one inspiration *into* some *reservoir* in the chest, or that the venous blood did return to the heart when *no* inspiration was made. To admit the first was an absurdity, since there is no structure in the chest capable of holding as a reservoir sixty ounces of blood; we were, therefore, compelled to admit the second inference, viz. that the blood did return to the heart when the respiration was suspended. Many excellent illustrations of the fact, that the venous blood did return to the heart not only during inspiration and during expiration, but also during a suspension of the respiration, might be found in comparative anatomy; but it would be only necessary just to glance at some of the amphibious quadrupeds. Could we suppose that, during their stay under water, the circulation was suspended? In the *cetacea*, that interesting order of the mammiferous animals, take the *monodon*, the *balæna*, or the *delphinus*, we should find a curious contrivance expressly calculated to enable the animal to continue a longer time from the surface, without being inconvenienced by the too great accumulation of blood on the auricles and great cardiac veins; there were particular vessels much enlarged for that purpose, especially the posterior cava at the liver. In the *seal* this dilatation was very remarkable; the cava forms a large sac or reservoir to receive the surplus blood whilst the animal is under water, till it can come to the surface and respire. In the diving birds the posterior cava is dilated in the same way for the same purpose.

Mr. Spry said, that it was unnecessary to resort to comparative anatomy for the required evidence, as it could be amply supplied by direct experiment. To prove that the vis a tergo, with the lateral pressure on the veins, was sufficient to bring back the venous blood, he cited some experiments of Magendie, described in the 2d Vol. of the last edition of his Physiology, and the experiments of Mr. John Hunter, mentioned in his "Treatise on the Blood," in which he opened the right side of the thorax in a living dog, and tied a ligature around the vena cava inferior above the diaphragm; and having closed the opening with his hand, that the circulation might go on and fill the large veins, when the inferior cava became turgid he killed the animal; and, on the following day, he found coagula in all the large abdominal veins, of sizes proportionate to the sizes of the vessels. Mr. Spry contended, that these experiments showed that the blood must have been returned to the parts in which it was found in such large quantities, by some other power than a thoracic vacuum. It might be said that it was returned by the aid of gravitation, as the position in which the animals were left after the experiments was not mentioned. To satisfy himself on that point, he had been induced to make some experiments, in which the influence of the thoracic vacuum should be effectually shut out, and gravitation itself employed against the returning columns of blood. He had made some experiments on rabbits in the following manner: he opened the right side of the thorax of two rabbits, and having compressed the vena cava inferior close to the pericardium, in one the pericardium itself was opened, and in the other not, he completely severed that vessel; he held the animals upright, the blood issued in large quantities from the lower orifice of the cava, as might have been anticipated, and, in a minute and a half, they were quite dead. He opened the abdomen to see if the blood might have been accumulated in the large abdominal veins, but they were all empty; the liver was white, and all the muscles were completely blanched.

With the able assistance of Mr. Vines, the demonstrator of anatomy at the Veterinary College, he had made other experiments on the horse and dog. The cephalic vein was laid bare by dissection in a horse about to be killed; a ligature was passed around it, and the vein was punctured longitudinally with a lancet. The animal was allowed to remain standing; the vein continued to bleed in a regular stream for about an hour, when it fell down exhausted from loss of blood. But the experiment which he considered to afford the best evidence on the subject, was that in which the right side of the chest of a half grown healthy young dog (between the terrier and bull dog) was laid open, without

wounding the pericardium or diaphragm; a ligature was passed around the cava inferior close to the pericardium, and the cava immediately became turgid beneath the ligature; he then punctured the vein longitudinally with a lancet, and held the animal upright by its fore paws. The animal breathed several times forcibly but regularly; the blood flowed from the punctured cava without intermission, both during *inspiration* and during *expiration*, but it was observed distinctly to flow out in greater quantity, and with greater force during expiration. The strength of the animal gradually sunk with the loss of blood; and, on opening the abdomen after death, the large abdominal veins were found empty, the liver almost white, and the muscles colourless, as in the former experiments.

He hoped that these experiments would suffice to show that the thoracic vacuum, the existence of which, to a certain extent, he did not mean to deny, exerted little influence on the return of the venous blood, as it was very evident that the venous blood could be brought back to the heart by other powers; and that far from deserving the second place among the forces concerned in the circulation of the blood, as assigned to it by Drs. Carson and Barry, it ought to be removed to a very subordinate rank.

Mr. Wigon observed, that he had repeatedly occasion to notice, that those who sought to arrive at a knowledge of Dr. Barry's theory from his books, seldom obtained their object. There were many points mentioned in Dr. Barry's book in a very imperfect manner to that in which he was accustomed to explain himself in his lectures; although he believed that Dr. Barry himself did not now attach so much importance to the influence of the thoracic vacuum as formerly. He considered the arguments drawn by Mr. Spry on comparative anatomy, tended rather to favour the opinion of Dr. Barry, than to militate against it. He thought that the quantity of blood named as escaping from each contraction of the left ventricle was too large; he did not think it ought to be reckoned at more than two drachms.

Mr. Spry replied, that he mentioned two ounces on the authority of Haller, Blumenbach, and Richerand; but admitting that only two drachms were expelled, even that quantity would be sufficient to embarrass the thoracic reservoir, under the circumstances he had mentioned. He drew a very different inference from the arrangement of the veins in the animals he had named; for if the blood could be brought thus far, it was fair to infer that the same powers were adequate to sending it to the heart; but that, as the respiration was suspended, the circulation through the lungs became impeded, and hence the value of the venous reservoirs, namely, to allow the animals to remain a longer time under water than they other could do.

Mr. Kingdon said, that he had that day made the experiment on himself, which had been just mentioned; he held his breath after a deep expiration, and counted his pulse, and he was led to do so from the same sort of reasoning, that if the heart sent two ounces of blood into the aorta at each contraction of the ventricle, it was clear that an equivalent quantity must enter the heart, and if the blood returned to the heart only during respiration, it was difficult to conceive how, during a suspension of the respiration, the necessary quantity could be supplied. Mr. Kingdon made some clever remarks on the hepatic circulation, and on the manner in which Dr. Barry supposed the vacuum to be formed in the chest, by the lungs not following immediately the distention of the thoracic parietes.

Dr. Clutterbuck stated, that Mr. Lloyd had been occupied in making some experiments on that very subject, and as he would in all probability mention them himself to the Society at its next meeting, he should only say, that they appeared fully to establish the fact, that the lungs were capable of expanding, so as to remain in contact with the parietes of the thorax under any degree of distention. He considered, from what he had that evening heard, that the originality of the thoracic vacuum theory, and of its influence on the circulation, had been shown not to belong to Dr. Barry; but that with whomsoever it might have originated, it appeared very certain that its influence on the circulation was almost nothing, and that he considered the question so far settled, that it was unnecessary to make any further experiments on the subject, and that to do so would expose animals to unnecessary suffering, and therefore be unjustifiable.

VACUUM DOCTRINE.

To the Editor of The Lancet.

Sir,—A man is always deemed to have the worst of an argument when he resorts to prevarication or to raillery, whether innocent or malicious. The case made out against the *efficacy* of *atmospheric pressure* in causing *absorption*, remains unshaken by any thing *Philovacuum* has as yet adduced, as will be seen by comparing our two communications; and if you will allow me, I will briefly recapitulate the principal points contained in my last letter. I said, 1st, That Dr. Barry admitted that "mere pressure *was sufficient* to prevent absorption," as shown by the ferule experiment; 2d, That

although Dr. Barry claimed that experiment as another *demonstration* of *his* theory, and referred for proof of its being so to the 77th page of his book, that not a single word is there said "about the effects of *pressure applied around* the poisoned wound;" 3d, That the head of the vacuum family was driven into a corner, and that he *shifted* out of it by a *trick*; 4th, That his *indispensable* condition requisite to absorption, a free application of atmospheric pressure to the absorbing surface, was *very inert* if not altogether *unnecessary*; 5th, That the application of the exhausted cupping-glass to a part *does cut off the communication* between the wound and thorax, as regards the *returning* vessels; and, *lastly*, That the exhausted cupping-glass prevented absorption *only* by the *pressure* of its edge *around* the poisoned part, in the same manner as the pressure of the ferule; adding, that *nothing to the contrary had yet been shown*. How these charges have been answered, may be seen by a reference to Philo's last production.

As I never suspected Philo to be a man of much reading, I was the more surprised that he should pretend to claim any relationship with the Toricellis and Pascals: however, as he does not appear to understand how the cupping-glass does act on the *living* body, I would refer him to Richerand's excellent work on Physiology, Chap. IV. on Respiration; where he will find the following remarks:—"The human body resists without any effort the *atmospherical pressure*, because it is applied at all times and in every direction: but if a *part* of its surface *ceases* for a moment *to be under its influence*, (atmospheric pressure,) it swells, *the fluids are determined to it in considerable quantity*, and the integuments become excessively distended, so as to be in danger of bursting; *such are the phenomena which attend the application of the cupping-glass.*"* I said that "*the rising* of the part within the exhausted cupping-glass was entirely owing *to the injection of the part* with arterial blood, *unresisted by atmospheric pressure;*" I did not at the time of writing that, recollect Richerand's remark; but it will be seen that we are perfectly agreed on the subject.

His advice respecting Redi should be pickled with his "belly-piece of fresh pork," for the use of those country gentlemen, who, *like himself*, require the aid of a translator to make Latin quotations suited to their capacities! A mouthful of Latin, or of compliments, will neither frighten nor flatter your old correspondent, who is opposed to all "*empty doctrines*," and therefore calls himself

ANTIVACUUM.

* See Dr. De Lys' translation of Richerand's Elements of Physiology; 3d ed. p. 181.

HOSPITAL REPORTS.

BARTHOLOMEW'S HOSPITAL.

INDURATION OF THE PREPUCE, WITH PAPULAR ERUPTIONS OVER THE BODY AND IRITIS.

CHARLES SEXTON, July 20, 1826, three months since, and a fortnight after coition, a small sore appeared on the inner surface of the prepuce; nothing was done at that time, and it gradually got worse. In a fortnight, eruptions broke out on the legs and trunk; three weeks previous to admission, he took mercurial pills; under their use, the sore began to heal, although the mouth was not affected. Ten days ago, he was attacked with inflammation of the left eye, the sight of which has gradually failed.

21. The prepuce is slightly thickened, and the sore on the very point of healing; and the glands in the groin are somewhat enlarged; the eruptions which seem to have been papular, and to have closely covered the whole body, more especially the limbs, are now in the state of desquamation. The left eye is affected with acute iritis; there is considerable external redness, the vessels, both of the conjunctiva and sclerotica being distended, and easily distinguishable. The cornea is clear. The iris, which is naturally blue, has assumed a much darker, dull and muddy tint; the pupillary margin and inner circle being of a rusty brown; all the general deposition into the texture of the iris has thus caused a very striking change in its appearance, there is no exsuion of lymph in distinct masses. Vision is lost for all useful purposes. There is no headache, and but little pain in the eye; occasionally, and particularly in the morning, slight pain is felt in the brow. There is pain in the shin bone; pulse is not affected; the tongue and bowels are in their natural state. Cupping on the left temple to ℥xiv. gr. ij. cal. et 1-3d opii. every 8 hours; ext. bellad. to the brow every night.

22. The pills were not taken as directed, neither did he apply the belladonna; the eye was easier after the cupping; the belladonna applied this morning, enlarged the pupil, so as to show that the margin of the iris is adherent.

23. This morning there was slight redness and feeling of weakness in the right eye, which he attributed to sleeping with the window open; twelve leeches to the left eye, the other treatment continued.

25. Inflammation is considerably reduced, and sight improved; the gums are slightly swelled; continue the calomel and opium, and apply leeches to the left eye.

27. Ten leeches were again applied yesterday evening; the mouth very sore; the patient is better in every respect, and can now see to read, took calomel and opium only at night, and had eight leeches applied.

31. The eye is not so well this morning, calomel and opium every 8 hours.

Aug. 2. Being better, cal. gr. ij. opii. 1-3d gr. only at night.

5. A relapse of inflammation, with as much pain and redness as in the first instance; cupping on the left temple to ʒxvj.; cal. gr. ij. opii. 1-3d. every six hours; ext. bellad. on the brow at night.

7. Mouth very sore; inflammation much abated; treatment continued.

9. Eye quite free from inflammation; it was thought advisable to go on with calomel night and morning, because of the disposition to relapse.

11. Took the calomel and opium at night only.

15. Is quite well, and can see as perfectly as ever; discharged. To attend occasionally, that the state of the organ may be watched.

CASE OF EXTENSIVE VARIX OF THE LEFT VENA SAPHENA MAJOR, WITH CHRONIC INFLAMMATION, AND GREAT SURROUNDING ENLARGEMENT AND INDURATION.

A woman, ætat. 50, was admitted into Elizabeth Ward, October 4, 1826, under the care of Mr. Lawrence. She is of a full habit, and ruddy complexion. The affected vein became varicose 30 years ago, after a difficult labour. She has experienced several attacks of inflammation in it, which on one or two occasions prevented her pursuing her usual occupations. These attacks were by no means so violent as the present, soon yielding to rest, and mild antiphlogistic means. For the last week, the vein and its tributary branches have been unusually large, knotted and painful. Leeches, lotions, and a graduated compress, had been employed.

At the time of admission there were two considerable tumours on the inner side of the knee, made up of numerous convolutions of the vein, connected and surrounded by a large mass of indurated cellular texture. The trunk of the vein could be felt under the skin, enlarged and indurated, for the space of five inches above the tumours, in the inside of the thigh; and for a like extent below the knee. A slight blush was partially observable on the skin covering the diseased vessel, more especially over the two tumours, which were a little painful. She could neither move the limb, nor bear on it without great pain. The pulse was small and frequent; skin hot; tongue white; bowels constipated; and appetite gone. Twenty leeches were ordered to the leg, and a purgative prescribed. As the pain, redness and swelling of the varicose tumours, with the general feverishness, led to a suspicion that matter might have formed, Mr. Lawrence made a small puncture in one of them; from whence issued merely a drop or two of blood. The leeches were repeated on the following day, with considerable relief as to the local as well as the general symptoms. On the next day there was a severe rigor, exacerbation of the fever, together with delirium at night. She became gradually worse, in spite of the strictest antiphlogistic treatment.

Besides a large bleeding, sixty leeches were applied in the neighbourhood of the inflamed veins, and aperient and saline medicines given to act freely on the bowels.

A tolerably free discharge of thin bloody matter, or rather of matter mixed with bloody fluid, issued from the puncture made in the vein. By the use of these means the disease appeared to have been impeded in its course, until the 10th, when the symptoms gradually aquired a more violent character and she became worse until the 25th, when she expired. From the 10th, the pulse had been small and rapid, the skin occasionally moist and clammy; the tongue white, and subsequently brown and dry; the stomach was particularly distended, there being great thirst, and almost continual nausea and vomiting, with the occurrence of frequent shiverings.

Post Mortem Examination.

The coats of the varicose vein were thickened and hardened, and a similar change had occurred in the surrounding cellular texture, which adhered to them firmly; the internal membrane was highly inflamed, containing pus at some parts, and in others covered by effused lymph or deposit of fibrine. Such was the state of the vein, from the inferior diseased portion to its termination in the femoral trunk. The vena profunda was inflamed, thickened, and plugged with adherent congula; the femoral vein contained a large congulum at the entrance of the saphena; below this point it was found completely filled with pus, its internal surface was covered with an irregular yellowish membrane, as far as the knee-joint, where it had unfortunately been divided. The vena cava to the heart, was of a dark dull or mahogany red colour; the right side of the heart, and the pulmonary artery, being of a deeper hue, whilst the left side exhibited a more florid colour. The aorta, near its origin, presented a deep scarlet colour, irremovable by washing, although it disappeared nearly by maceration. The adbomen was distended to an immense size, with flatus; the uterus contained some tubercles; the veins of the abdomen and thorax appeared natural; the head was not examined.

The following Works *have been received.*

1. A Physiological Enquiry respecting the Action of Moxa, and its utility in inveterate cases of Sciatica, Lumbago, Paraplegia, Epilepsy, and some other painful Paralytic and Spasmodic Diseases of the Nerves and Muscles. By Wm. Wallace, M.R.I.A. &c.; Surgeon to the Charitable Infirmary of Dublin; Lecturer on Semeiology and Clinical Surgery, &c. 8vo. pp. 148. Hodges and M'Arthur, Dublin, and Longman and Co. London, 1827.

2. An Oration, delivered on Thursday, February 9th, 1826, before the Hunterian Society; with Supplementary Observations and Engravings. By Sir William Blizard, Knight., F.R.S., F.A.S., F.R.S. Edinb.; Soc. R. Gotting. Corresp.; Hon. Prof. of the Royal College of Surgeons in London; Surgeon to His Royal Highness the Duke of Gloucester, and to the London Hospital. 4to. pp. 39. Underwoods.

3. An Essay on the Use of Chlorurets of Oxide of Sodium and of Lime, as powerful disinfecting Agents; and of the Chloruret of Oxide of Sodium, more especially as a remedy of considerable efficacy in the treatment of Hospital Gangrene, Phagedenic, Syphilitic, and Ill-conditioned Ulcers; Mortification, and various other Diseases. Dedicated, by permission, to the Right Hon. Robert Peel. By Thomas Alcock, Member of the Royal College of Surgeons in London; of the Medical and Chirurgical Society, &c. &c. 8vo. pp. 148. London, 1827. Burgess and Hill.

4. An Essay on Medical Education. By W. Barrett Marshall, an Assistant Surgeon in the Royal Navy. 12mo. pp. 114. London, 1827. Burgess and Hill, and S. Highley.

5. Medical Botany, or Illustrations and Descriptions of the Medicinal Plants of the London, Edinburgh, and Dublin Pharmacopœias, with those lately introduced into Medical Practice. By John Stephenson, M.D., of the University of Edinburgh, and James Morss Churchill, Esq., Surgeon, Fellow of the Medico-Botanical Society of London. Royal 8vo. John Churchill, Leicester Square, London; Cafrae and Son, Edinburgh; Hodges and M'Arthur, Dublin, 1827.

The present work is No. 1 of a series of monthly parts, which are intended to illustrate by plates, coloured from nature, and letter-press descriptions, the officinal plants of the National Pharmacopœias, as well as others, which though in common use, have not yet found a place in these corporate and imbecile productions. The generic and specific characters, English, provincial, and foreign appellations, synonyms, natural history, physical, chemical, and medical properties, and uses of the various plants, and particularly of those poisonous ones which are indigenous to Great Britain and Ireland, will form, if the spirit of the present Number animate the rest, a complete and valuable system of toxicology, and materia medica. In speaking of the symptoms produced by poisonous plants on the animal economy, the authors have not forgotten to enumerate the most approved antidotes or modes of treatment devised for their removal, nor the morbid appearances which are detected after death; and have given some very interesting historical details of accidental and designed poisonings. There are a few typographical errors in the present Number, and the articles devoted to the plants are numbered instead of the pages; and although the latter may be no great defect, the former should be sedulously avoided. The plates are well executed, and we augur well of the work generally.

6. Observations on the Treatment of Gonorrhœa, by a new preparation from the Balsam of Copaiba, with Illustrative Cases. By James Thorn, Member of the Royal College of Surgeons. 12mo. pp. 57. S. Highley, 1827.

The balsam of copaiba, from its nauseous taste and smell, is one of the numerous valuable medicines which have rarely suited what is called genteel practice; or agreed with the most ordinary stomachs. We are glad to find, therefore, that the sphere of its utility is likely to be much extended by the discovery of Mr. Thorn, that all its virtues reside in a resin. "By distillation of copaiba, (he says,) an essential oil was produced, of a light green colour, having a most unpleasant smell and taste; its specific gravity being 876 to 1000 water, leaving a brown resinous extract, quite soft, but becoming hard and brittle when cold; nearly tastless and inodorous, soluble in æther and pure alcohol. The proportions obtained from two ounces of the balsam were *eleven* parts essential oil, to five of extract." The *extract*, which we have seen, may be taken in doses of ten or fifteen grains, without inconvenience; but in one instance related by the author, 20 minims of the *essence* produced sickness, severe pain in the stomach, and several loose motions. The extract is a very elegant preparation, and the author has related several cases of gonorrhœa, some of them on his own authority, and some on Mr. Tyrrell's, in which it was by no means equivocally useful.